Ontario. Legislative Assembly

SESSIONAL PAPERS

TORONTO PUBLIC LIBRARY

VOL. XLVIII.—PART XI.

SECOND SESSION

OF THE

FOURTEENTH LEGISLATURE

OF THE

PROVINCE OF ONTARIO

[and 1 map inserted in vol. (Hydro-Electric Power Com.

SESSION 1916

14603
8 5 18

TORONTO:
Printed and Published by A. T. WILGRESS, Printer to the King's Most Excellent Majesty
1916

Printed by
WILLIAM BRIGGS
Corner Queen and John Streets
TORONTO

LIST OF SESSIONAL PAPERS

PRESENTED TO THE HOUSE DURING THE SESSION.

TITLE.	No.	REMARKS.
Accounts, Public, 1915	1	*Printed.*
Agricultural College, Report	30	"
Agricultural and Experimental Union, Report	32	"
Agricultural Societies' Report	42	"
Agriculture, Department of, Report	29	"
Amherstburg, Police Magistrate	82	*Not Printed.*
Ancient Order of United Workmen, Report of Committee on Bill No. 53	89	*Printed.*
Archivist, Provincial, Report	51	"
Auditor, Provincial, Statements	53	*Printed.*
Bee-Keepers' Association, Report	35	*Printed.*
Births, Marriages and Deaths, Report	20	"
British Red Cross Fund, Report	56	"
Canada Copper Company, Correspondence	80	*Not Printed.*
Capewell, Herbert, Charge Against	59	"
Carrique, J. H., Extradition, Correspondence	83	"
Children, Neglected, Report	27	*Printed.*
Civil Servants, How Many Serving with Allies	78	*Not Printed.*
Civil Servants, Names of those Enlisted	79	"
Civil Servants, Permanent in Service	90	*Printed.*
Corn Growers' Association, Report	33	*Printed.*
Dairymen's Association, Report	37	*Printed.*
Division Courts, Report	5	"
Education, Report	17	*Printed.*
Education, Orders-in-Council	61	"
Education, Technical, Correspondence	91	*Not Printed.*
Elections, Return from Records	50	*Printed.*
Entomological Society, Report	36	"
Epileptics and Feeble-Minded, Report	24	"
Estimates, 1916-17	2	"
Factories, Report	46	*Printed.*
Fall Fairs, Instructions for Judges at	69	*Not Printed.*

Title.	No	Remarks.
Farmer's Institute, Report	40	*Printed.*
Feeble-Minded and Epileptics, Report	24	"
Flour Sent to Great Britain, Statement	93	*Not Printed.*
Friendly Societies, Report	11	*Printed.*
Fruit Growers' Association, Report	44	"
Game and Fisheries Report	14	*Printed.*
Guelph Prison Farm, Officials at	85	*Not Printed.*
Guelph Prison Farm, Capital Expenditure on	86	"
Health, Report of Board	21	*Printed.*
Highway Improvement, Report	15	"
Horticultural Societies, Report	43	"
Hospitals and Charities	25	"
Hydro-Electric Power Commission, Report	48	*Printed.*
Hydro-Electric Power Commission, Requests Made to	67	*Not Printed.*
Idiots and Epileptics, Report	23	*Printed.*
Industries, Report	45	"
Insane, Hospitals for, Report	22	"
Insurance, Report	10	"
Labour, Report	16	*Printed.*
Lands, Forests and Mines, Report	3	"
Legal Offices, Report	6	"
Library, Report	52	*Not Printed.*
Liquor License Acts, Report	28	*Printed.*
Live Stock Branch, Report	38	"
Loan Corporations, Statements	12	"
Manitoulin Islands, Fishing Licenses in	60	*Not Printed.*
Mines, Report	4	*Printed.*
Monteith Demonstration Farm, Report	62	"
Municipal Drainage Act, Cases Arising Under	84	"
Northern Development Branch, Report	63	*Printed.*
Ontario Military Hospital, Payments in Respect of	76	*Not Printed.*
Ontario Railway and Municipal Board, Report	49	*Printed.*
Ontario Reformatory: See *Guelph Prison Farm*		
Prison and Reformatories, Report	26	*Printed.*
Provincial Auditor, Statements	53	"
Provincial Municipal Auditor, Report	8	"
Public Accounts	1	"

Title.	No.	Remarks.
Public Health, Report	21	*Printed.*
Public Works, Report	13	"
Queen Victoria Niagara Falls Park, Report	9	*Printed.*
Railway and Municipal Board, Report	49	*Printed.*
Recruiting, Aid to	75	*Not Printed.*
Refuge, Houses of, Correspondence *re* Establishment of	58	"
Registrar General, Report	20	*Printed.*
Registry Offices, Report	7	"
Rex *vs.* Friedman *re* Bail	74	*Not Printed.*
Secretary and Registrar, Report	19	*Printed.*
Soldiers, Returned, Correspondence *re* Care of	68	*Not Printed.*
Stallion Enrolment Board, Report	39	*Printed.*
Statute Distribution, Statement	88	*Not Printed.*
Surrogate Courts, Orders-in-Council	64	"
Temiskaming and N. O. R. Commission, Report	47	*Printed.*
Temiskaming and N. O. R., Buffet Cars	65	*Not Printed.*
Temiskaming and N. O. R., Fire Insurance	66	"
Temiskaming and N. O. R., Quotation *re* Shipment of Steel	92	"
Toronto University, Report	18	*Printed.*
Unemployment Commission, Report	55	*Printed.*
Unemployment, Conditions of	57	*Not Printed.*
United Workmen, A. O. of, Report of Committee on Bill No. 53	89	*Printed.*
Vegetable Growers' Association, Report	34	*Printed.*
Veterinary Association, Report	31	"
War Tax, Amount Received and Expended	70	*Not Printed.*
Whitby Asylum, Total Expenditure	87	"
Windsor, Police Magistrate	81	"
Women's Institutes, Report	41	*Printed.*
Workmen's Compensation Board, Report	54	"
Workmen's Compensation, Employers Under Schedule 1	71	*Not Printed.*
Workmen's Compensation, Levy of Assessment	72	"
Workmen's Compensation, Employers under Schedule 2	73	"
Workmen's Compensation Board, Correspondence *re* appointment	77	"

LIST OF SESSIONAL PAPERS

Arranged in Numerical Order with their Titles at full length; the dates when presented to the Legislature; the name of the Member who moved the same and whether ordered to be Printed or not.

CONTENTS OF PART I.

No. 1 Public Accounts of the Province for the year ending 31st October, 1915. Presented to the Legislature, March 7th, 1916. *Printed.*

No. 2 Estimates—Supplementary, for the service of the Province for the year ending 31st October, 1915-16. Presented to the Legislature, March 7th, 1916. *Printed.* Further Supplementary. Presented to the Legislature, April 4th, 1916. *Printed.* Estimates for the year ending 31st October, 1916. Presented to the Legislature, April 11th, 1916. *Printed.*

CONTENTS OF PART II

No. 3 Report of the Department of Lands, Forests and Mines for the year 1915. Presented to the Legislature, March 17th, 1916. *Printed.*

No. 4 Report of the Bureau of Mines for the year 1915. Presented to the Legislature, April 19th, 1916. *Printed.*

CONTENTS OF PART III.

No. 5 Report of the Inspector of Division Courts for the year 1915. Presented to the Legislature, March 15th, 1916. *Printed.*

No. 6 Report of the Inspector of Legal Offices for the year 1915. Presented to the Legislature, March 21st, 1916. *Printed.*

No. 7 Report of the Inspector of Registry Offices for the year 1915. Presented to the Legislature, March 28th, 1916. *Printed.*

No. 8 Report of the Provincial Municipal Auditor for the year 1915. Presented to the Legislature, April 18th, 1916. *Printed.*

No. 9 Report of the Queen Victoria Niagara Falls Park Commission for the year 1915. Presented to the Legislature, April 18th, 1916. *Printed.*

CONTENTS OF PART IV.

No. 10 Report of the Superintendent of Insurance for the year 1915. Presented to the Legislature, March 17th, 1916. *Printed.*

No. 11 Report of the Registrar of Friendly Societies' transactions for the year 1915. Presented to the Legislature, March 17th, 1916. *Printed.*

No. 12 Loan Corporations—Statements made by Building Societies, Loan Companies and Loaning, Land and Trust Companies, for the year 1915. Presented to the Legislature, March 17th, 1916. *Printed.*

CONTENTS OF PART V.

No. 13 Report of the Department of Public Works for the year 1915. Presented to the Legislature, March 21st, 1916. *Printed.*

No. 14 Report of the Department of Game and Fisheries for the year 1915. Presented to the Legislature, March 22nd, 1916. *Printed.*

No. 15 Report on Highway Improvement for the year 1915. Presented to the Legislature, April 5th, 1916. *Printed.*

No. 16 Report of the Bureau of Labour for the year 1915. Presented to the Legislature, April 17th, 1916. *Printed.*

CONTENTS OF PART VI.

No. 17 Report of the Department of Education for the year 1915. Presented to the Legislature, April 17th, 1916. *Printed.*

No. 18 Report of the Toronto University Board of Governors for the year ending 30th June, 1915. Presented to the Legislature, March 1st, 1916. *Printed.*

CONTENTS OF PART VII.

No. 19 Report of the Secretary and Registrar of the Province for the year 1915. Presented to the Legislature, April 6th, 1916. *Printed.*

No. 20 Report of the Registrar-General upon Births, Marriages and Deaths for the year 1915. Presented to the Legislature, March 9th, 1916. *Printed.*

No. 21 Report of the Provincial Board of Health for the year 1915. Presented to the Legislature, March 2nd, 1916. *Printed.*

CONTENTS OF PART VIII.

No. 22 Report upon the Hospitals for the Insane for the year 1915. Presented to the Legislature, April 11th, 1916. *Printed.*

No. 23 Report upon the Hospitals for Idiots and Epileptics at Orillia and Woodstock for the year 1915. Presented to the Legislature, April 19th, 1916. *Printed.*

No. 24 Report upon the Feeble-Minded in Ontario for the year 1915. Presented to the Legislature, March 24th, 1916. *Printed.*

No. 25 Report upon the Hospitals and Charities of the Province for the year 1915. Presented to the Legislature, April 13th, 1916. *Printed.*

No. 26 Report upon the Prisons and Reformatories of the Province for the year 1915. Presented to the Legislature, April 11th, 1916. *Printed.*

No. 27 Report upon the Neglected and Dependent Children of the Province for the year 1915. Presented to the Legislature, April 12th, 1916. *Printed.*

No. 28 Report upon the operation of the Liquor License Acts in the Province during the year 1915. Presented to the Legislature, March 2nd, 1916. *Printed.*

CONTENTS OF PART IX.

No. 29 Report of the Department of Agriculture for the year 1915. Presented to the Legislature, April 17th, 1916. *Printed.*

No. 30 Report of the Ontario Agricultural College and Experimental Farm for the year 1915. Presented to the Legislature, April 17th, 1916. *Printed.*

No. 31 Report of the Ontario Veterinary College for the year 1915. Presented to the Legislature, April 19th, 1916. *Printed.*

No. 32 Report of the Agricultural and Experimental Union for the year 1915. Presented to the Legislature, April 17th, 1916. *Printed.*

No. 33 Report of the Corn Growers' Association for the year 1915. Presented to the Legislature, April 14th, 1916. *Printed.*

No. 34 Report of the Vegetable Growers' Association for the year 1915. Presented to the Legislature, April 17th, 1916. *Printed.*

No. 35 Report of the Bee-Keepers' Association for the year 1915. Presented to the Legislature, April 14th, 1916. *Printed.*

No. 36 Report of the Entomological Society for the year 1915. Presented to the Legislature, April 17th, 1916. *Printed.*

No. 37 Report of the Dairymen's Association for the year 1915. Presented to the Legislature, April 17th, 1916. *Printed.*

CONTENTS OF PART X.

No. 38 Report of the Live Stock Branch of the Department of Agriculture for the year 1915. Presented to the Legislature, April 17th, 1916. *Printed.*

No. 39 Report of the Stallion Enrolment Board for the year 1915. Presented to the Legislature, April 14th, 1916. *Printed.*

No. 40 Report of the Farmers' Institutes of the Province for the year 1915. Presented to the Legislature, April 18th, 1916. *Printed.*

No. 41 Report of the Women's Institutes of the Province for the year 1915. Presented to the Legislature, April 14th, 1916. *Printed.*

No. 42 Report of the Agricultural Societies of the Province for the year 1915. Presented to the Legislature, April 17th, 1916. *Printed.*

No. 43 Report of the Horticultural Societies for the year 1915. Presented to the Legislature, April 17th, 1916. *Printed.*

No. 44 Report of the Fruit Growers' Association of the Province for the year 1915. Presented to the Legislature, April 17th, 1916. *Printed.*

No. 45 Report of the Bureau of Industries for the year 1915. Presented to the Legislature, April 17th, 1916. *Printed.*

No. 46 Report of the Inspectors of Factories for the year 1915. Presented to the Legislature, April 17th, 1916. *Printed.*

CONTENTS OF PART XI.

No. 47 Report of the Temiskaming and Northern Ontario Railway Commission for the year 1915. Presented to the Legislature, March 21st, 1916. *Printed.*

No. 48 Report of the Hydro-Electric Power Commission for the year 1915. Presented to the Legislature, April 7th, 1916. *Printed.*

CONTENTS OF PART XII.

No. 49 Report of the Ontario Railway and Municipal Board for the year 1915. Presented to the Legislature, March 24th, 1916. *Printed.*

No. 50 Return from the Records of the By-Elections in 1915-16. Presented to the Legislature, March 6th, 1916. *Printed.*

No. 51 Report of the Provincial Archivist for the year 1915. Presented to the Legislature, April 10th, 1916. *Printed.*

No. 52 Report of the Librarian upon the State of the Library. Presented to the Legislature, March 1st, 1916. *Not printed.*

No. 53 Provincial Auditor's Statements for the year 1915. Presented to the Legislature, March 15th, 1916. *Printed.*

No. 54 Report of the Workmen's Compensation Board to the 31st December, 1915. Presented to the Legislature, April 14th, 1916. *Printed.*

CONTENTS OF PART XIII.

No. 55 Report of the Commission on Unemployment. Presented to the Legislature, March 1st, 1916. *Printed.*

No. 56 Report on the British Red Cross Fund, Trafalgar Day. Presented to the Legislature, April 18th, 1916. *Printed.*

No. 57 Return to an Address, of the 5th March, 1915, to His Honour the Lieutenant-Governor praying that he will cause to be laid before this House a Return of: 1. Copies of all petitions or requests or communications received by the Government from Trades and Labour Councils, Municipal Authorities, Social and Philanthropic organizations, or other societies, organizations or individuals, in reference to the conditions of Unemployment in the Province, and in reference to governmental action to relieve conditions of unemployment. 2. All communications passing between the Government of Canada and the Government of Ontario, or any officer or official of the Governments respectively, in reference to conditions of unemployment, and as to governmental action in reference thereto. 3. A statement showing what action has been taken by the Government to relieve conditions of unemployment in the Province. 4. Copy of the Orders-in-Council appointing the Commission to investigate the conditions of Unemployment, and defining the scope of the work of the Commission. Mr. *Rowell.* Presented to the Legislature, March 1st, 1916. *Not printed.*

No. 58 Return to an Order of the House of the 1st April, 1915, for a Return showing: 1. All correspondence between the Government or any officer or official thereof and all Councils of Women and all other persons, societies or associations, in reference to the establishment of Houses of Refuge in municipalities and in regard to legislation for the purpose of requiring municipalities to establish Houses of Refuge for the care of feeble-minded and unfortunate persons. 2. All correspondence or communications between the Government or any officer or official thereof and the Councils of municipalities or any officer or official thereof.

with reference to the compulsory establishment by municipalities of Houses of Refuge for feeble-minded and unfortunate persons. Mr. *Hurdman.* Presented to the Legislature, March 1st, 1916. *Not printed.*

No. 59 Return to an Order of the House of the 1st April, 1915, for a Return showing: 1. A copy of all the proceedings in the Police Court in the City of Toronto in the charge made against Herbert Capewell for demanding commission on certain Government Military contracts for the supply of boots for the Canadian Expeditionary Force, including therein the evidence and the Police Magistrate's judgment and commitment. 2. A copy of the record of the proceedings on the trial of the said Herbert Capewell before His Honour Judge Coatsworth in the County Judge's Criminal Court of the County of York, including the evidence, statements of Counsel and statement of acquittal. Mr. *Atkinson.* Presented to the Legislature, March 1st, 1916. *Not printed.*

No. 60 Return to an Order of the House of the 1st April, 1915, for a Return showing: 1. What Fishermen received fishing licenses in Manitoulin Island for the fishing season, 1914, and upon what dates were these licenses granted respectively. 2. What Fishermen received fishing licenses for the year 1915, and upon what dates were these licenses granted respectively. Mr. *Parliament.* Presented to the Legislature, March 1st, 1916. *Not printed.*

No. 61 Copies of Orders-in-Council and Regulations made under the authority of the Department of Education. Presented to the Legislature, March 2nd, 1916. *Printed for distribution.*

No. 62 Report of the Monteith Demonstration Farm, 1915. Presented to the Legislature, April 14th, 1916. *Printed.*

No. 63 Report of the Northern Development Branch of the Department of Lands, Forests and Mines for the year 1915. Presented to the Legislature, March 13th, 1916. *Printed.*

No. 64 Copies of Orders-in-Council under Subsection 6 of Section 78, Chapter 62, R.S.O., 1914, relating to Surrogate Courts. Presented to the Legislature, March 7th, 1916. *Not printed.*

No. 65 Return to an Order of the House of the 25th March, 1915, for a Return showing: 1. How many Dining or Buffet Cars have the T. & N. O. Railway purchased, and what was the date of purchase, and the price paid for the said cars respectively. 2. How many of such cars are in actual use upon the railway. Mr. *Ferguson (Kent).* Presented to the Legislature, March 7th, 1916. *Not printed.*

No. 66 Return to an Order of the House of the 25th March, 1915, for a Return showing: 1. With what Fire Insurance Companies did the T. & N. O. Railway place its Fire Insurance for the fiscal year ending 31st October, 1914, and through what agents was the Insurance placed. 2. With what Fire Insurance Companies has the T. & N. O. Railway Company placed its Fire Insurance for the current year, and through what agents has the Insurance been placed. Mr. *Davidson.* Presented to the Legislature, March 7th, 1916. *Not printed.*

No. 67 Return to an Order of the House, of the 1st April, 1915, for a Return showing: 1. If any requests have been made by the Lieutenant-Governor in Council to the Hydro-Electric Power Commission under section 3 of the Hydro-Electric Railway Act, 1914, to inquire into and report upon the proposed electric railways in Ontario. 2. If requests have been made, what are the dates upon which such requests were made and with respect to what railways or territories were such requests made. 3. What reports, if any, have been received by the Lieutenant-Governor in Council on the proposed Hydro-Electric Railways in Ontario. 4. Has the Lieutenant-Governor in Council approved the construction of any such railways; if so, which ones. Mr. *Richardson.* Presented to the Legislature, March 7th, 1916. *Not printed.*

No. 68 Return to an Order of the House of the 13th March, 1916, for a Return showing: 1. Copies of all correspondence between the Government of the Province of Ontario, or any officer or official thereof, and the Government of the Dominion of Canada, or any officer or official thereof, with reference to the care of or provision for returned soldiers, and particularly assisting returned soldiers to secure employment. 2. Copies of all resolutions passed at a conference between representatives of the Government of Canada and of the Provinces, in reference to the care of and provision for returned soldiers. 3. Copy of the document setting out the understanding arrived at between the Government of Canada and the Governments of the different Provinces in reference to the care of the said soldiers. Mr. *Rowell.* Presented to the House March 15th, 1916. *Not printed.*

No. 69 Return to an Order of the House of the 13th March, 1916, for a Return showing: 1. The names and addresses respectively of the persons who attended the short course of Instructions for Judges at Fall Fairs given at the Ontario Agricultural College at Guelph in June, 1915. 2. The names and addresses respectively of the persons who attended the Course of Instruction for Judges at Fall Fairs at the Experimental Farm, Ottawa, in 1915. 3. The names and addresses of the persons who were appointed by the Government as Judges at Fall Fairs in 1915, and what departments or classes did each judge respectively. Mr. *Ham.* Presented to the Legislature, March 17th, 1916. *Not printed.*

No. 70 Return to an Order of the House of the 6th March, 1916, for a Return showing how much of the sum received by the Government on account of the War Tax, 1915, has been expended and for what purposes has the money been expended and the amount of the expenditure for such purposes respectively. Mr. *Bowman.* Presented to the Legislature, March 20th, 1916. *Not printed.*

No. 71 Return to an Order of the House of the 24th March, 1915, for a Return showing: 1. What is the total number of employers of labour coming under Schedule 1 of The Workmen's Compensation Act, as reported to the Workmen's Compensation Board. 2. What is the total number of employees so reported. 3. What is the total amount of the assessment for the year 1915 for such employers. 4. How much has been received to date in respect of such assessment. 5. How much is on deposit to the credit of this fund to date. 6. Where and to whose credit are the moneys on deposit. Mr. *Hurdman.* Presented to the Legislature, March 21st, 1916. *Not printed.*

No. 72 Return to an Order of the House of the 25th March, 1915, for a Return showing: 1. If the Workmen's Compensation Board levied its assessment upon employers upon the basis of current cost, or the capitalized value. 2. If not on the basis of current cost, what amount or percentage has been added to the assessment over and above current cost. 3. If the Workmen's Compensation Board established a Reserve Fund under section 92 of The Workmen's Compensation Act. 4. If so, what amount or percentage has been included in the sum assessed upon employers to provide this Reserve Fund. Mr. *Elliott.* Presented to the Legislature, March 21st, 1916. *Not printed.*

No. 73 Return to an Order of the House of the 24th March, 1915, for a Return showing: 1. What is the total number of employers of labour coming under Schedule 2 of The Workmen's Compensation Act, so far as ascertained by the Workmen's Compensation Board. 2. What is the total number of employees under section 2. 3. What is the total number of employers coming under section 3, so far as the Workmen's Compensation Board has been able to ascertain. 4. What is the total number of employees coming under section 3, so far as the Workmen's Compensation Board has been able to ascertain. Mr. *Davidson.* Presented to the Legislature, March 21st, 1916. *Not printed.*

No. 74 Return to an Order of the House of the 21st March, 1916, for a Return showing: 1. Copies of all correspondence which passed between the Government, or any officer or official thereof, in reference to the granting of bail in the case of Rex *vs.* Friedman, heard at Sault Ste. Marie, Ontario. 2. Copies of all correspondence received by the Government from any source in reference to the granting, or refusal, of bail in said case. Mr. *Proudfoot.* Presented to the Legislature, March 22nd, 1916. *Not printed.*

No. 75 Return to an Order of the House of the 22nd March, 1916, for a Return showing what were the dates and amounts of the several payments made by the Province to aid Recruiting, and to whom were such payments made. Mr. *Ham.* Presented to the Legislature, March 22nd, 1916. *Not printed.*

No. 76 Return to an Order of the House of the 22nd March, 1916, for a Return showing what were the dates and the amounts of the several payments made by the Government of Ontario in respect of the Ontario Military Hospital, and to whom were such payments respectively made. Mr. *Richardson.* Presented to the Legislature, March 22nd, 1916. *Not printed.*

No. 77 Return to an Order of the House of the 29th March, 1915, for a Return showing: All correspondence received by the Government or any member or official thereof with reference to the appointment of present members to the Workmen's Compensation Board, or in support of the applications of the said members to be so appointed. Mr. *Carter.* Presented to the Legislature, March 28th, 1916. *Not printed.*

No. 78 Return to an Order of the House of the 1st April, 1915, for a Return showing: 1. How many persons in the employ of the Province or the Government are now serving with the Canadian or Allies' armies. 2. What are the names of the persons so serving, and what salaries do they respectively receive from the Government. Mr. *Racine.* Presented to the Legislature, March 28th, 1916. *Not printed.*

No. 79 Return to an Order of the House of the 24th March, 1916, for a Return giving the names of all persons employed in the Civil Service of the Province who have enlisted for overseas service with the Canadian Expeditionary Forces since the commencement of the War to date. Mr. *McCrae.* Presented to the Legislature, March 28th, 1916. *Not printed.*

No. 80 Return to an Order of the House of the 31st March, 1916, for a Return showing: 1. All correspondence between the Government of Ontario, or any member or official thereof, and the Canada Copper Company or the International Nickel Company, or any officer or official of either of the said Companies, in reference to the tax to be paid to the Province of Ontario in respect of the profits made on the nickel mining operations carried on within the Province of Ontario by or on behalf of the said Companies, or either of them. Mr. *Carter.* Presented to the Legislature, April 4th, 1916. *Not printed.*

No. 81 Return to an Order of the House of the 22nd March, 1915, for a Return showing: 1. Who is the Police Magistrate for the City of Windsor. 2. When was he appointed. 3. Whom did he

succeed. 4. What salary does he receive from the City of Windsor. 5. How much from fees for convictions in County cases. 6. What amount in fees and costs in County cases has he collected from the 1st day of December, 1908, to the 1st day of January, 1915. 7. What amount for convictions in County cases has the Police Magistrate paid to the County Treasurer from the 1st December, 1908, to the 1st January, 1915. 8. What convictions has he reported to the Clerk of the Peace for Essex County from September 1st, 1914, to date. Mr. *Ducharme.* Presented to the Legislature, April 5th, 1916. *Not printed.*

No. 82 Return to an Order of the House of the 22nd March, 1915, for a Return showing: 1. Who is the Police Magistrate for Amherstburg. 2. When was he appointed. 3. Whom did he succeed. 4. What convictions has he reported. 5. What amount of fees and fines has he collected during his term of office. 6. What disposition was made by him of these fees and fines. Mr. *Tolmie.* Presented to the Legislature, April 5th, 1916. *Not printed.*

No. 83 Return to an Order of the House of the 3rd April, 1916, for a Return of copies of all correspondence or other papers and documents which passed between J. H. Carrique, of the City of Toronto, or any other person or persons and the Attorney-General or any official of his Department or of any Department of the Government in connection with, or arising out of, a request made by the said J. H. Carrique to have Robert M. Catts and Edward C. Hill extradited from the United States of America on a charge that they had defrauded him out of the sum of $5,000. Mr. *Proudfoot.* Presented to the Legislature, April 6th, 1916. *Not printed.*

No. 84 Report of the Decisions in cases arising under "The Municipal Drainage Act," together with other cases analagous thereto and The General Rules relating to practice and procedure under the said Act. Presented to the Legislature, April 7th, 1916. *Printed.*

No. 85 Return to an Order of the House of the 24th March, 1916, for a Return showing: 1. The names of the officials connected with the Ontario Reformatory or Guelph Prison Farm, giving their positions and salaries respectively. Mr. *Marshall.* Presented to the Legislature, April 11th, 1916. *Not printed.*

No. 86 Return to an Order of the House of the 9th March, 1916, for a Return showing: 1. What is the total capital expenditure on the Guelph Prison Farm to the close of the fiscal year. 2. If any further capital expenditures are contemplated; and showing the estimated amount thereof. 3. And how many prisoners are now confined at the Guelph Prison Farm. Mr. *Ferguson (Kent).* Presented to the Legislature, April 11th, 1916. *Not printed.*

No. 87 Return to an Order of the House of the 9th March, 1916, for a Return showing: 1. What is the total capital expenditure on the Whitby Asylum to the close of the fiscal year. 2. And if any further capital expenditures are contemplated; and if so, showing the estimated amount thereof. 3. And the number of inmates now confined in the Whitby Asylum. Mr. *Wigle*. Presented to the Legislature, April 12th, 1916. *Not printed.*

No. 88 Statement of the distribution of the Revised and Sessional Statutes for the year 1915. Presented to the Legislature, April 13th, 1916. *Not printed.*

No. 89 Report of the Sub-Committee on Bill (No. 53), Respecting the Ancient Order of United Workmen of the Province of Ontario. Presented to the Legislature, April 18th, 1916. *Printed by order of the House.*

No. 90 Return to an Order of the House of the 3rd March, 1915, for a Return showing: 1. How many permanent officials and employees of all classes were engaged in the inside Civil Service on the 1st days of January, 1905 and 1915 respectively. 2. How many permanent officials and employees of all classes were engaged on the outside service on the 1st days of January, 1905 and 1915 respectively. Mr. *Gillespie*. Presented to the Legislature, April 19th, 1916. *Not printed.*

No. 91 Return to an Order of the House of the 30th day of March, 1916, for a Return showing: 1. Copies of all correspondence between the Government of Ontario and any member or official and the Government of the Dominion of Canada or any member or official thereof, with reference to the Report of the Dominion Government Commission on Technical Education and as to any action to be taken upon the basis of the said report or otherwise in connection with Technical Education. Mr. *Ducharme*. Presented to the Legislature, April 19th, 1916. *Not printed.*

No. 92 Return to an Order of the House of the 11th April, 1916, for a Return showing: 1. If the T. & N. O. Railway was, within the past twelve months, asked to quote rates on the shipment of 6,000 tons of fabricated steel, or some quantity of fabricated steel, from Sarnia to Regina. 2. If the T. & N. O. Railway was asked to quote rates, who were the shippers or parties requesting the rates; and what was the amount of steel involved; and what were the rates quoted. 3. If rates were quoted, how did these rates compare with the tariff rates in the tariff approved by the Board of Railway Commissioners for the quantities of steel and the haul in question. Mr. *Munro*. Presented to the Legislature, April 19th, 1916. *Not printed.*

No. 93 Return to an Order of the House of the 17th day of April, 1916, for a Return showing if the Government received any statement from the Government of Great Britain, or from any other source, with reference to the use made of the flour contributed by the Province of Ontario to the Mother Country, of the value of $780,468.70. 2. If so, how was the flour used or disposed of. Mr. *Lowe*. Presented to the Legislature, April 19th, 1916. *Not printed.*

Spring Wheat on Farm of Mr. D. Stewart, Earlton, Ont., September, 1915.

FOURTEENTH ANNUAL REPORT

OF THE

Temiskaming and Northern Ontario Railway Commission

ONTARIO GOVERNMENT RAILWAY

HON. W. H. HEARST, PREMIER

For Year Ended October 31st

1915

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:

Printed and Published by A. T. WILGRESS, Printer to the King's Most Excellent Majesty

1916

Printed by
WILLIAM BRIGGS
Corner Queen and John Streets
TORONTO

To His Honour Sir John Strathearn Hendrie, C.V.O., a Lieutenant-Colonel in the Militia of Canada,

Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

The undersigned has the honour to present to Your Honour the Fourteenth Annual Report of the Temiskaming and Northern Ontario Railway Commission for the fiscal year ended October 31st, 1915.

Respectfully submitted,

F. G. MACDIARMID,

Minister of Public Works.

HON. FINLAY MACDIARMID,

Minister of Public Works,

Toronto.

SIR,—I have the honour, by direction, to submit to the Legislature the Fourteenth Annual Report of the Temiskaming and Northern Ontario Railway Commission for the fiscal year ended October 31st, 1915.

I have the honour to be, Sir,

Your obedient servant,

W. H. MAUND,

Secretary-Treasurer.

Temiskaming and Northern Ontario Railway Commission.

J. L. Englehart	*Chairman*	Petrolia.
Denis Murphy	*Commissioner*	Ottawa.
Geo. W. Lee	*Commissioner and General Agent*	North Bay.

CHIEF OFFICERS.

W. H. Maund	*Secretary-Treasurer*	Toronto.
S. B. Clement	*Chief Engineer and Supt. of Maintenance*	North Bay.
W. A. Griffin	*Superintendent of Traffic*	North Bay.
T. J. Gracey	*Accountant*	Toronto.
A. J. Parr	*General Freight and Passenger Agent*	North Bay.
W. A. Graham	*Purchasing Agent and Storekeeper*	North Bay.
A. R. H. Mitchell	*Auditor and Car Accountant*	North Bay.
C. L. Ferguson	*Paymaster*	North Bay.
T. Ross	*Master Mechanic*	North Bay.
H. L. Rodgers	*Mechanical Engineer*	North Bay.
C. Battley	*Air Brake Inspector*	North Bay.
S. H. Ryan	*Train Master*	North Bay.
R. L. Lamb	*Chief Train Despatcher*	North Bay.
Wm. Young	*General Roadmaster*	North Bay.
S. J. Faught	*Supervisor*	North Bay.
J. Drinkwater	*Supervisor*	North Bay.
W. J. Oldham	*Bridge and Building Master*	North Bay.
W. J. Douglas	*Road Foreman, Locomotives*	North Bay.
W. J. Kelly	*Supt. Telegraphs and Telephones*	North Bay.
Arthur A. Cole	*Mining Engineer*	Cobalt.
J. G. Kerry	*Consulting Engineer*	Toronto.

TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION.

General Remarks.

Accounts and statistics for year ending October 31, 1915, herewith:—

Mileage in operation on October 31, 1915:—

	Miles.	Miles.
Main Line.		
North Bay to Cochrane	252.29	252.29
Branch Lines.		
Charlton Branch	7.60	
Porcupine Branch (includes Iroquois Falls Branch)	40.11	
Elk Lake Branch	28.50	
		76.21
Nipissing Junction Spur—leased to G.T. Ry.	.....	2.10
Yards and Sidings.		
Yards and sidings, main and branch lines	109.13	
Liskeard Spur	1.12	
		110.25
Double track, North Cobalt to Haileybury	.....	1.70
Subsidiary Lines.		
Nipissing Central Railway	12.64	12.64
Total mileage		455.19

Following condensed statement of Revenue Account for fiscal year ended October 31st, 1915, compared with the year 1914. The sub-divisions of the condensed statement for 1915 are shown in detail in the financial part of this report:—

	1913.	1914.	1915.
Revenue from transportation	$1,567,228 43	$1,580,668 28	$1,485,080 02
Revenue other than transportation	88,926 22	90,230 59	66,471 75
Total Operating Revenue	$1,656,154 85	$1,670,898 87	$1,551,551 77
Operating Expenses	1,477,550 01	1,468,574 23	1,328,496 91
Net Operating Revenue	$178,604 84	$202,324 64	$223,054 86
Ore Royalties	81,421 20	55,874 45	26,268 74
Rent from joint facilities	.....	.....	13,815 26
Rent from lease of road	.....	.....	16,601 37
Miscellaneous income	.....	.....	2,857 98
	$260,026 04	$258,199 09	$282,598 21
Deductions from income—hire of equipment, etc.	4,702 32	29,221 86	72,059 58
*Total Earnings	$255,323 72	$228,977 23	$210,538 63

*Operating expenses amount to 85.6 per cent. of the gross earnings, the net earnings to 14.4 per cent., as compared with 88.7 per cent. and 11.3 per cent., respectively, for the twelve months ended October 31, 1913, and 87.8 per cent. and 12.2 per cent. for the twelve months ended October 31, 1914.

Earnings and expenses of Nipissing Central Railway are not included, but shown separately on page 383 of this Report.

Total of pay rolls for the year amounted to	$953,209 41

Comparison of pay rolls since commencement of operation:—

1905	216,119 37
1906	450,214 02
1907	574,959 09
1908	687,541 66
1909	681,072 47
1910	878,192 07
1911	783,218 89
1912	1,090,310 65
1913	1,218,473 04
1914	1,112,866 73
1915	953,209 41
Total	$8,646,177 40

The various statements contained in the financial part of report, fully itemized, will show:—

	—November 1st to October 31—		
	1915.	1914.	1913.
Revenue per mile of road	$4,723 28	$5,061 18	$5,098 89
Expenditure per mile of road	4,044 25	4,448 06	4,548 97
Net revenue per mile of road	$679 03	$613 12	$549 02

A betterment in Net Revenue of $65.91 per mile of Road operated during year 1914, and $129.11 per mile of Road operated during year 1913, averaged 328.49 miles year 1915, as against 330.14 miles year 1914, and 324.81 miles for year 1913.

Receipts.

	—November 1st to October 31st—		
	1915.	1914.	1913.
Revenue from transportation	$1,485,080 02	$1,580,668 28	$1,567,228 43
Revenue from operation other than transportation	66,471 75	90,230 59	88,926 42
Total Revenue	$1,551,551 77	$1,670,898 87	$1,656,154 85

Decrease over year 1914, $119,347.10, and year 1913, $104,603.08.

Expenditures.

	%	—November 1st to October 31st— 1915.	%	1914.	%	1913.
Maintenance of way and structures	21.	$325,865 86	24.2	$408,046 15	26.	$430,820 04
Maintenance of equipment	16.9	262,654 51	17.	284,935 87	14.1	242,633 93
Traffic expenses	1.2	18,135 13	1.1	18,872 65	1.	16,857 36
Transportation expenses.	40.3	625,911 92	39.	651,687 20	41.1	680,480 08
General expenses	6.2	95,929 49	6.3	105,032 36	6.5	106,758 60
Total operating exp.	85.6	$1,328,496 91	87.8	$1,468,574 23	88.7	$1,477,550 01
Balance	....	$223,054 86	....	$202,324 64	....	$178,604 84

Maintenance of Way.

Renewal of rails—ties et al, as noted under the report of Chief Engineer and Superintendent of Maintenance, as also that of General Roadmaster.

Maintenance of Equipment.

The equipment has been maintained as heretofore to the highest standard of efficiency. In addition to the maintenance statements here below, there is shown a charge of $44,551.20, which has been added to reserve fund to cover depreciation on rolling equipment and to provide for the renewal of cars and locomotives retired, sold or destroyed.

Charges to Maintenance of Equipment, Year 1915.

Locomotives—repairs	$86.269 58	
Freight train cars—repairs	16,208 51	
Passenger train cars—repairs	47,890 37	
Work equipment—repairs	53,655 99	
		$204,024 45

Charges to Depreciation, Year 1915.

Locomotive	$14,845 56	
Freight train cars	12,327 36	
Passenger train cars	14,040 84	
Work equipment	3,337 44	
		$44,551 20

Details of work will be found in report of Master Mechanic.

Transportation Expenses.

Large decrease in expenses points to more economical fuel consumption for yard and road locomotives, amounting to $18,744.51, and engine house expenses to $9,137.86. Other increases and decreases are noted in the Comparative Statement, Financial part of report.

General.

For year under review, as compared with 1913-14, the percentage of Operating Expenses are:—

1915	85.6
1914	87.8
1913	88.7

Balance brought down from Result of Operation for year:—

1915	$223,054.86
1914	202,324.64
1913	178,604.84

About $21,000 of a betterment over year 1914, and about $44,000 over year 1913.

It is, however, under Other Income where lies our disappointment.

Ore Royalties year 1915	$26,268.74
Ore Royalties year 1914	55,874.45
Ore Royalties year 1913	81,421.20

Net earnings for Fiscal Year 1915	$210,538.63
Net earnings for Fiscal Year 1914	228,977.23
Net earnings for Fiscal Year 1913	255,323.72

Notwithstanding decrease in Net Results from Ore Royalties of $29,675.21, it is noted that Net Earnings for year 1915 as compared with year 1914, show decrease of $18,438.60 only.

We have transmitted to Provincial Treasurer for year under review, cheque for $250,000, as follows:—

T. & N. O. Railway	$225,000.00
Nipissing Central Railway	25,000.00

Mines and Minerals.

Mining Engineer's Preliminary Report only included the regular complete report for year to December 31, 1915, to be specially published as usual.

Surveys—Construction.

Chief Engineer and Superintendent of Maintenance's report covers.

Additions and Betterments—Roads.

Attention is directed to report of Chief Engineer and Superintendent of Maintenance as also that of General Roadmaster.

Telephone Train Despatching.

The third year has not alone demonstrated the utility, but the strong factor in "Safety First."

Right of Way, etc.

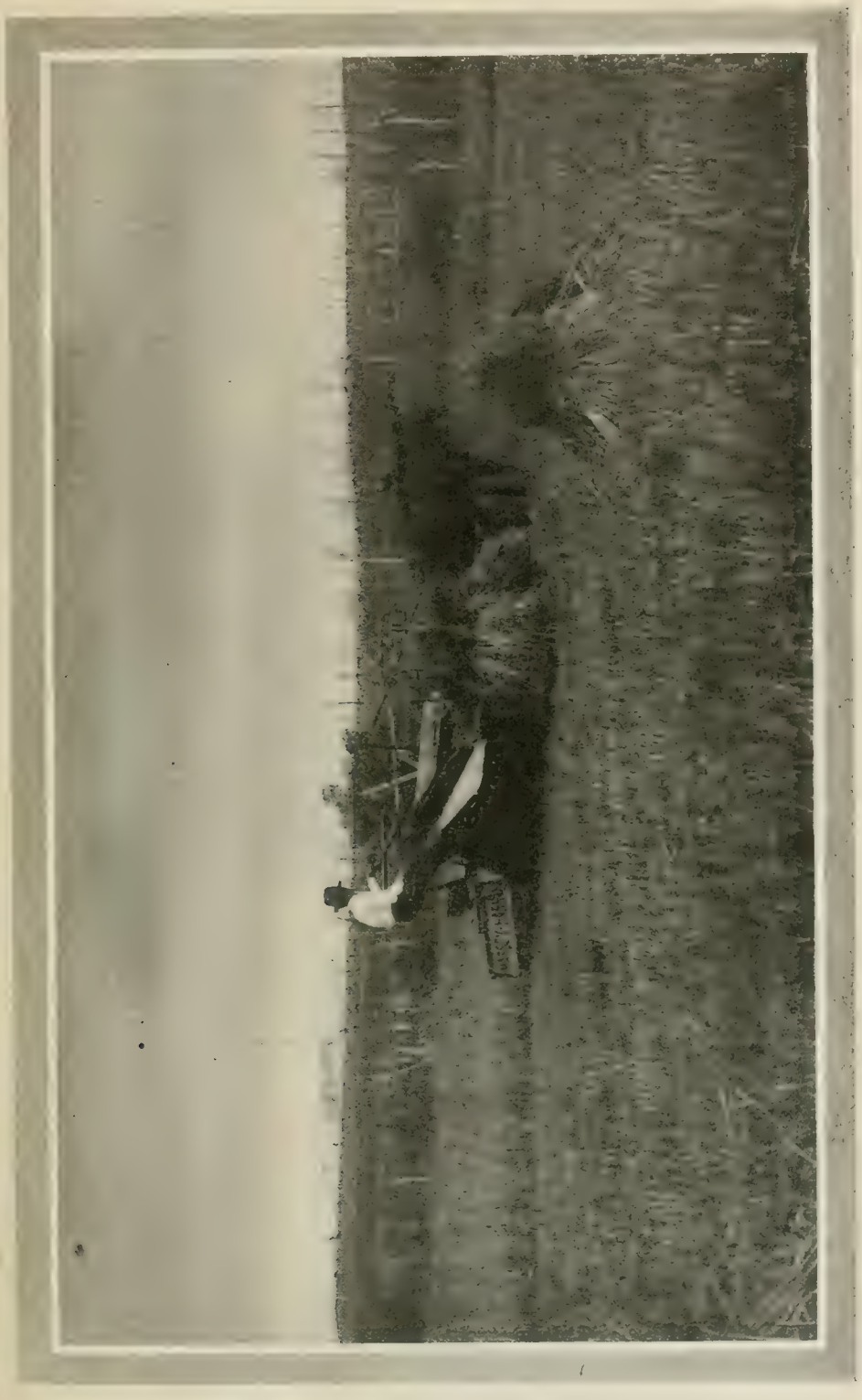
Attention is directed to statement of Land Purchased—see page 154 of Report.

Townsites.

Report of Land Commissioner as well as reports of Land Department, see financial part of Report.

Demonstration Car.

For the fifth consecutive year, Demonstration Car has travelled through Province from Ottawa on the east to Kincardine on the west. We are thankful to state that with the cordial co-operation of the Department of Agriculture, the usual exhibit of roots, grains, vegetables, cereals has been larger than heretofore and satisfying, as manifested by the many visitors attending, the strong interest evinced and the enlarged correspondence that has followed by and from intending settlers in Greater Ontario. We are also deeply indebted to the Canadian Pacific and Grand Trunk Railways and their very obliging employees who have assisted materially in making the tour a success.



Shocker on Farm of Mr. O. Perrin, August, 1915. Photograph taken just before dropping of sheaves.

Counsel's Report.

Attention is directed to report of our Counsel, Mr. D. E. Thomson, K.C.

Tariff Rates.

Continue to average as low, and in very many instances lower than other railways for similar service.

Telegraph and Telephone.

Additions to above are noted under Report of Superintendent of Telegraph and Telephones. Large facilities called for with enhanced volume and larger volume emphasized, if that were possible, the increased traffic as well as settlement of the lands.

Passengers Carried.

During the year we carried 480,995 passengers, and thankful to report have kept up the good record of not killing or seriously injuring a single passenger. Since 1905 we have carried 5,197,326 passengers, as noted below, and not killed or seriously injured one.

Year.	Passengers.
1905	86,648
1906	359,861
1907	518,678
1908	479,005
1909	580,748
1910	670,913
1911	479,102
1912	497,452
1913	508,055
1914	535,869
1915	480.995
Total	5,197,326

We have pleasure in directing attention to report of Edwards, Morgan & Co., Chartered Accountants, with reference to the accounts.

Edwards, Morgan & Co.

Toronto, Ont., December 30, 1915.

J. L. Englehart, Esq., Chairman,

Temiskaming and Northern Ontario Rly. Commission,

Toronto, Ont.

Dear Sir,—Under instructions from the Commissioners we have maintained a running audit of the accounts of the Commission for the year ending October 31, 1915. Our examination has included the Cash Receipts and Disbursements, Accounts Collectible, Accounts Payable, Agents' and Conductors' Accounts, Foreign Tickets, Foreign Freights, Car Mileage Accounts and Bank Balances.

We certify that all transactions relating thereto have been properly vouched, and that the Cash and Bank Balances have been duly accounted for. We have verified the balances of accounts outstanding and have ascertained that they correspond with the General Ledger Accounts.

We find the books in good order and all information asked for has been promptly given.

We are,

Yours faithfully,

"EDWARDS, MORGAN & CO."

Insurance—Fire.

During the year, fire insurance has been maintained on Commission's property to the extent of $2,435,680, valuation under the following headings:—

BUILDINGS AND CONTENTS.

Division No. 1—buildings	$307,050 00	
" 1—contents	236,700 00	
" 2—buildings	114,700 00	
" 2—contents	34,400 00	
Kerr Lake Br. —buildings	600 00	
" —contents	100 00	
Charlton Branch—buildings	8,350 00	
" —contents	2,300 00	
Porcupine Branch—buildings	51,650 00	
" —contents	23,600 00	
Elk Lake Branch—buildings	19,950 00	
" —contents	3,400 00	
Electric Railway—buildings	10,300 00	
" —contents	23,240 00	
		$836,340 00

BRIDGES AND TRESTLES.

Division No. 1	$14,050 00	
Division No. 2	36,000 00	
Kerr Lake Branch	5,000 00	
Charlton Branch	11,100 00	
Porcupine Branch	12,000 00	
Elk Lake Branch	14,800 00	
		$92,950 00

FREIGHT.

Merchandise in transit	$200,000 00	
		$200,000 00

ROLLING STOCK.

Locomotives and tenders	$300,250 00	
Passenger equipment	382,700 00	
Freight equipment	366,800 00	
Work equipment	103,350 00	
Electric railway equipment	53,290 00	
Foreign equipment	100,000 00	
		$1,306,390 00
Total		$2,435,680 00

The rate on above insurance is $1.50 per $100.00 per a period of three years, or 50c. per $100.00 per annum for the years 1915, 1916, 1917. Insurance is divided as follows, under a joint schedule:

Western Assurance Co., 50 per cent.; Home Insurance Co., 35 per cent.; Norwich Union Fire Insurance Society, 15 per cent.

COUNSEL'S REPORT—D. E. THOMSON, K.C.

Litigation.

At the end of the financial year there were no actions pending in which the Commission was defendant and only one in which it was plaintiff, viz.:

T. & N. O. vs. Abitibi Pulp & Paper Co. Action for compensation for lands in the Townsite of Matheson flooded by the defendant.

Re Balaban. Litigation is threatened by one Balaban, administrator of the estate of Evan Koplonchuk an employee of Messrs. Morrow & Beatty who was killed while unloading a car on the siding of the Abitibi Pulp & Paper Co. The plaintiff first sued the employers of the deceased but subsequently moved to add the T. & N. O. as a party defendant. An order has been made permitting the plaintiff to add the T. & N. O. and negotiations for settlement are now pending.

Re Morrow & Beatty. Litigation is threatened for damages to car and contents arising out of the same accident in which Evan Koplonchuk was killed.

Claims.

A number of claims by employees and others were made during the year. Some have been settled and others abandoned, but in no case has a writ been issued.

Damage Claims.

A considerable number of claims have arisen during the year for cattle killed on the Commission's right of way and in respect of freight, baggage, etc. lost, destroyed, delayed, mislaid or damaged. Most of these claims have been adjusted or abandoned while others are still pending. None have been placed in suit.

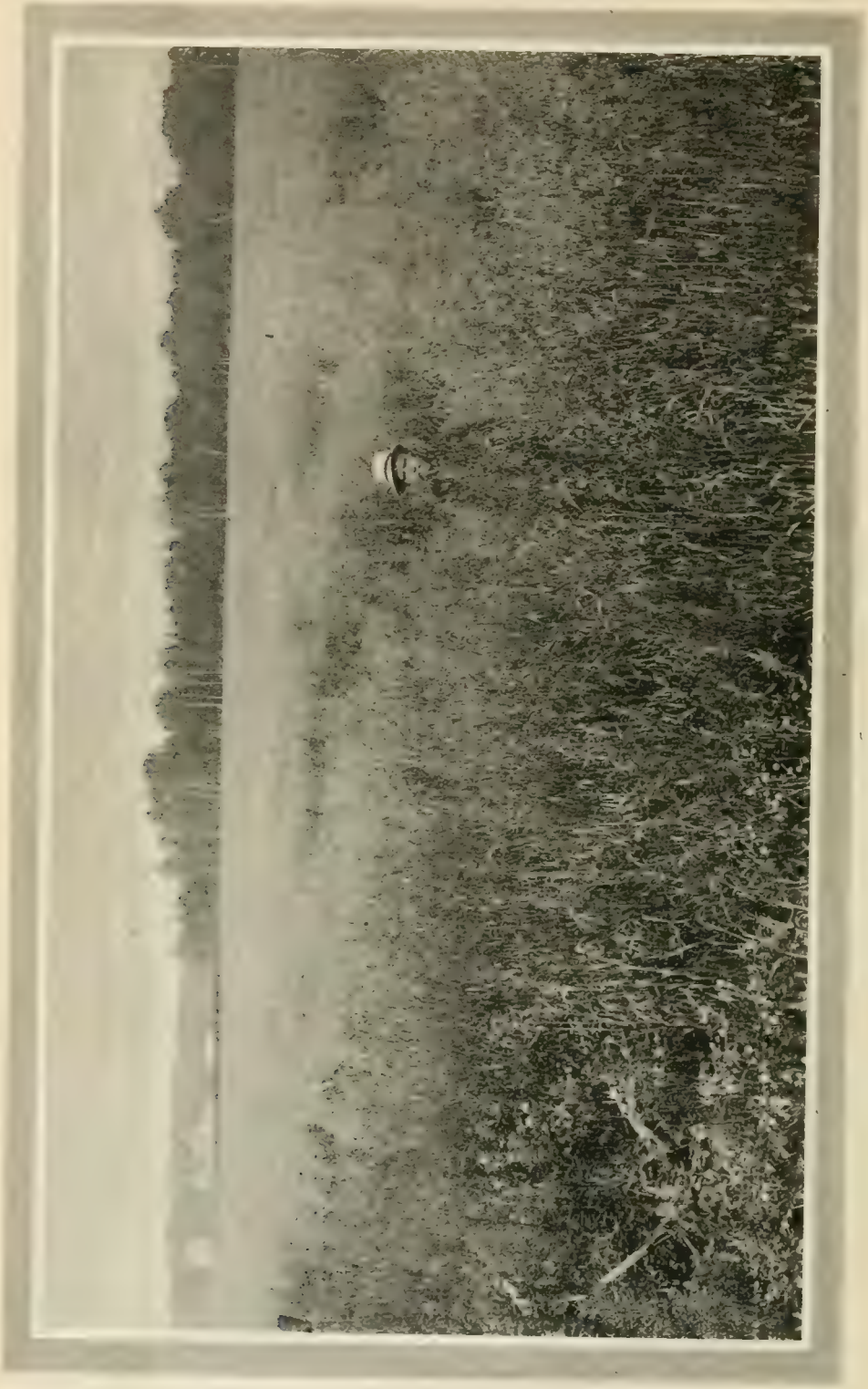
Agreements, Contracts etc.

A considerable number of agreements and contracts covering various matters between the Commission and others have been prepared and executed.

Grand Trunk Railway Company, Grand Trunk Pacific and the National Transcontinental Railway.

In consequence of the Grand Trunk Pacific having decided not to take over the operation of the National Transcontinental line east of Winnipeg, the Grand Trunk Railway Company notified the Commission that it did not propose to operate over the Commission's lines under the Running Rights Agreement of 1st December, 1911. The Commission has declined to recognize the right of the Grand Trunk to recede from the agreement after the same has been duly validated and acted upon and after the Commission has made large expenditures on the strength thereof. Claim has accordingly been made for the rental fixed by the agreement. Matter stands for adjustment.

Meantime a tentative arrangement has been made with the Commissioners of the National Transcontinental Railway for a temporary through train service over the Commission's line on terms suitable for such limited service.

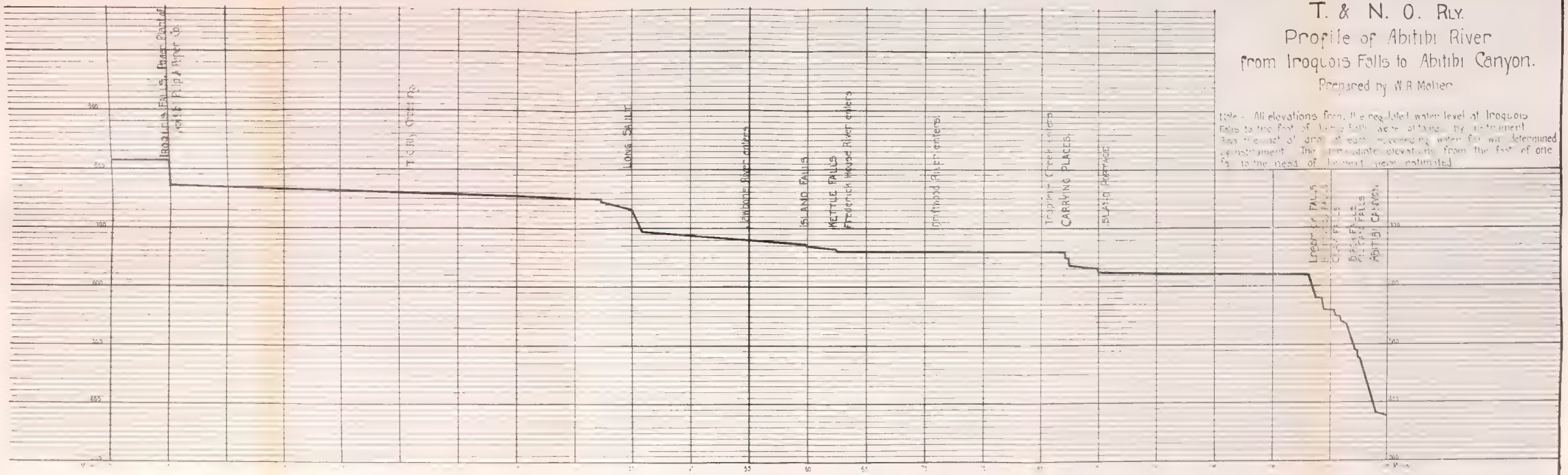


Oats Grown on Farm of Henry Schafner, Brentha, Ont., 1915.

T. & N. O. Rly.
Profile of Abitibi River from Iroquois Falls to Abitibi Canyon.

Prepared by W. A. Maher

Note - All elevations from the regulated water level at Iroquois Falls to the foot of Long Sault were obtained by instrument and the rest of the elevations according to water flow were determined by instrument. The intermediate elevations from the foot of one fall to the head of the next were estimated.



ANNUAL REPORT OF CHIEF ENGINEER AND SUPERINTENDENT OF MAINTENANCE, T. & N. O. RAILWAY.

Year ending, October 31st., 1915.

W. H. MAUND, ESQ.,

Secretary-Treasurer,

Toronto, Ontario.

DEAR SIR,—I beg to submit the following annual report, as Chief Engineer and Superintendent of Maintenance, for the fiscal year ended October 31st, 1915.

New Lines, Surveys and Construction.

During the year, the Commission's Locating Engineer, Mr. W. R. Maher, devoted a portion of his time to a continuation of previous studies of the topography and resources of the Abitibi River Valley between Cochrane and New Post. Particular attention was given the water powers and the influence that their development would have on the location of any future extensions of the T. & N. O. Railway.

The accompanying profile of the Abitibi River clearly indicates the possibilities of power development. The total fall in the river between the Transcontinental Railway crossing and the foot of Abitibi Canyon can be utilized by the following developments:

Water Power	Proposed Head	Estimated Minimum Discharge	Estimated Minimum 24-hour Power
Long Sault Rapids.....	60 Ft.	4,500 C.F.S.	23,500 H.P.
Carrying Places.....	55 "	4,500 "	24,000 "
Lobstick Falls.....	60 "	4,800 "	26,000 "
Abitibi Canyon.....	200 "	4,800 "	87,500 "

Additional Yard Facilities Completed During the Year.

North Bay Junction:

A storage spur siding 1,100 ft. long and a cinder storage spur 350 ft. long were constructed east of the material yard.

Earlton Junction:

The work in progress at the close of last year was completed. This includes a new town siding 754 ft. long and the extension of the Elk Lake Branch main line 1,402 ft. to the station. Also the grading of the roadways on the station grounds.

Leeville:

A private spur was taken over by the Commission and extended 438 ft. and made into a through public siding, with standing room for thirteen cars.

Boston Creek:

A public spur siding 349 ft. long was constructed to take care of the business developments around this locality due to the numerous gold discoveries.

Porquis Junction:

A spur siding 450 ft. long was laid in connection with the new coaling plant now being erected.

M.P. No. 233:

A public spur siding 678 ft. long was built at M.P. 233 to take care of the pulpwood being cut in this locality. This siding is about half way between Nellie Lake and Holland.

M.P. No. 245.5:

This public spur was extended 362 ft. to provide additional shipping facilities for the pulpwood being cut in that vicinity.

Cochrane:

A connection was installed between the T. & N. O. Railway and the Transcontinental Railway main lines at the diamond crossing west of the Union Station for the interchange of through passenger traffic from one line to the other. This allows the T. C. Railway passenger trains to use the south side of the station. A similar connection was installed east of the station for the same purpose.

Iroquois Falls:

It was found that the facilities provided at this point for the handling of cars to and from the Abitibi Power and Paper Company's mill were inadequate, so to provide the additional accommodation required, three new transfer sidings were constructed, one of 2,872 ft., one of 1,390 ft., and the third 1,152 ft.

Additional Yard Facilities under Construction at the Close of Year.

North Bay Junction:

No. 10 yard track is being extended to serve new boiler plant at carpenter shop.

Ramore:

An eight car siding is being constructed at this point.

Industrial Tracks Constructed.

Temagami:

Milne's spur at M.P. 73.6 was extended 251 ft.

Iroquois Falls:

The coal spur of the Abitibi Power and Paper Company was extended 175 ft.

M.P. 11.0, *Porcupine Sub-division*:

A private spur siding at M.P. 11.0 for M. Holgevac. Siding 251 ft. to hold three cars for the shipment of pulpwood, etc.

M.P. 23, *Porcupine Sub-division*:

A private siding was constructed for Crawford & Levison at M.P. 23.0. This siding is 277 ft. long to hold four cars for the shipment of forest products.

M.P. 39.2, *Porcupine Sub-division*:

A spur 2,079 ft. long was built from the main line of the Porcupine Subdivision to the Hollinger Mine mill. A short spur 420 ft. long was built near the end of the one mentioned above.

Timmins:

A spur siding 528 ft. long was constructed to serve Marshall-Ecclestone's warehouse.

New Buildings.

North Bay Junction:

The coach and carpenter shops were enlarged and rearranged, including a new paint shop and a new frame boiler house. In this connection a four inch water main was extended to the boiler house with branches in the various buildings for fire protection. A new sand house 18 x 22 ft. was erected near the round-house.

Haileybury:

The freight shed was raised one foot and an eight foot platform was constructed. The tracks were rearranged to suit this improvement.

Elk Lake:

A coal shed 11 x 21 ft. was built for hard coal storage for passenger cars.

Nushka:

A new standard section house was built at this point to replace section house at Monteith which was transferred to the Department of Agriculture.

Hoyle:

A standard shelter station was built just west of the Porcupine River.

Porquis Junction:

There is under construction at this point a 100-ton Roberts & Schaeffer mechanical coaling plant, also a 41,600 gal. steel water tank with two Sheffield-Johnston stand pipes and frame pump house pipe lines, etc., in connection therewith.

Other Improvements:

During the past season 1,220 lin. ft. timber trestle were replaced by embankment.

The following culverts were constructed:

Concrete tile	1,555 lin. ft.
Timber	100 lin. ft.
Corrugated iron	496 lin. ft.
	2,151 lin. ft.

In culverts under the track, concrete pipes were used exclusively. The timber and corrugated iron culverts were constructed at road crossings and for station ground, drainage, etc.

Additional tile drains to underdrain roadbed aggregated 1.86 miles.

Embankments restored to width by train-filling and by clay from line cuttings, aggregated 109.75 miles.

During the year 10.98 miles of new fence were constructed by our own forces.

Six public and four private road crossings were built.

All the betterments carried out this year were handled by the Commission's forces. These betterments are shown in detail, in the accompanying reports of the General Roadmaster and Bridge and Building Master.

Maintainence of Way.

Rail renewals this year were very light, 3.70 miles of main line were relaid with new rail of similar 80 No. A.S.C.E. section.

Tie renewals were as follows:

Main track	84,181	8-ft. ties
Main track	6,308	10-ft. ties
Sidings	8,771	8-ft. ties
Total	99,260	

28 sets of switch ties were renewed.

24.5 miles of main track were reballasted with good quality gravel ballast.

19 miles right-of-way and 32½ acres of station grounds were thoroughly cleared and grubbed and all logs, roots and brush burned.

All rock and clay cuts on 57.67 miles of main track were thoroughly cleaned.

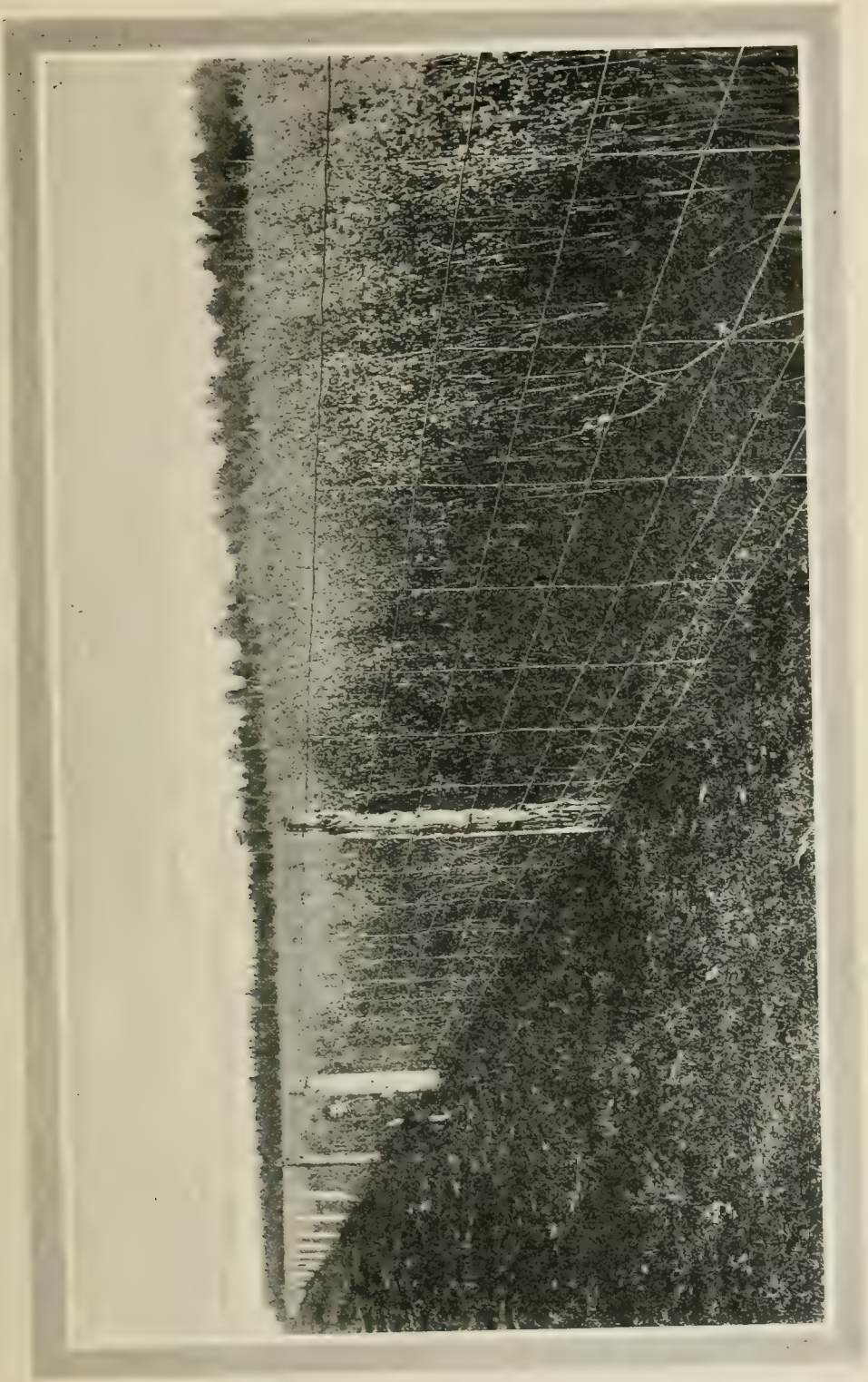
17.21 miles of right-of-way fence were repaired or renewed.

28.48 miles of track were resurfaced.

The curves on 19 miles of main line were spiralled and relined.

Miles of Railway Owned and Operated.

	Oct. 31, 1915.	Oct. 31, 1914.
First track	328.60 mls.	328.60 mls.
Second track	1.70 mls.	1.70 mls.
Yard Track and Sidings	97.96 mls.	95.39 mls.
Private and Industrial Spurs	12.29 mls.	12.63 mls.
	440.55 mls.	438.32 mls.



Oats Grown on Farm of John Prophet, Chamberlain, Ont., 1915.

Owned but not Operated by G. T. Railway.

Nipissing Junction Spur	2.10 mls.	2.10 mls.

Owned by T. & N. O. Railway, but Operated by N. C. R.

Main Track	10.45 mls.	10.45 mls.
Yard Track and Sidings	1.14 mls.	1.14 mls.
Private Sidings	1.05 mls.	1.05 mls.
	12.64 mls.	12.64 mls.

General Remarks.

The Commission's property, including roadbed, track, structures and equipment, has been fully maintained and greatly improved. In the accompanying reports of the Motive Power and Car Department, the Road Department and the Bridge and Building Department, the wide variety and scope of the undertakings, already referred to, are more fully described.

A large number of the employees of the above departments have responded to the call of King and Empire and have enlisted for Overseas service. These have been granted leave of absence with partial pay.

I have pleasure in testifying to the faithful and efficient service rendered by the officials and employees without which the successful results could not have been accomplished.

The advice of the Commission's Consulting Engineer, Mr. J. G. G. Kerry, was obtained in connection with all surveys, and construction and betterments.

Accidents.

The following is a list of personal injuries relating to departments, under my jurisdiction, occurring during the year:

1914.

November 4th, George Parker, boilermaker, Englehart, was scalded on the face, arms and body. Commission's physicians at Englehart and North Bay attended him.

November 6th, Daniel Dewan, pitman, fell from a ballast car at Nellie Lake Pit and slightly injured his leg.

December 10th, H. Koroluk, sectionman, slipped and fell on the ice at Osborne yard and dislocated his shoulder.

December 17th, Robert Broughton, machinist, had his leg slightly jammed at the North Bay shops.

1915.

January 8th, Mike Guyenezuk, night engine coaler, had his finger slightly jammed at Timmins.

January 11th, Joseph Bellevau, section foreman, fell through hopper bottom of coal car and broke one of his ribs.

January 18th, William McDonald, machinist's apprentice, North Bay, was cut on the palm of the hand by a lathe tool.

February 5th, S. Renta, laborer, was accidentally struck on the head with a shovel by a fellow laborer. Both men were shovelling snow near the round-house at North Bay Junction.

March 4th, G. Hall, sectionman, while chopping stumps at McCool, cut his left ankle slightly with the axe.

April 30th, R. Montemurro, extra gang foreman, was bruised on face and body by derailment of hand car on which he was riding at M. P. 29½.

June 8th, F. Reddaway, laborer, was injured on the foot by a tie falling on it.

June 24th, O. Peterson, laborer, while chopping stumps at M.P. 21, Elk Lake Branch, cut his right foot with the axe.

June 29th, R. Corr, laborer, Doherty ballast pit, while loading rails, let a rail fall on his left hand slightly injuring the two middle fingers.

July 1st, S. Crocco, laborer, at M.P. 122, was struck on the foot by a fellow laborer, who was hammering down ties into the track.

August 16th, J. Bakewell, laborer, while loading ties at Nuskha yard, was slightly injured on the side of the head.

August 18th, H. Aubrey, laborer, Dane pit, while pulling out the jack-arm bar of the steam shovel injured the thumb of his left hand.

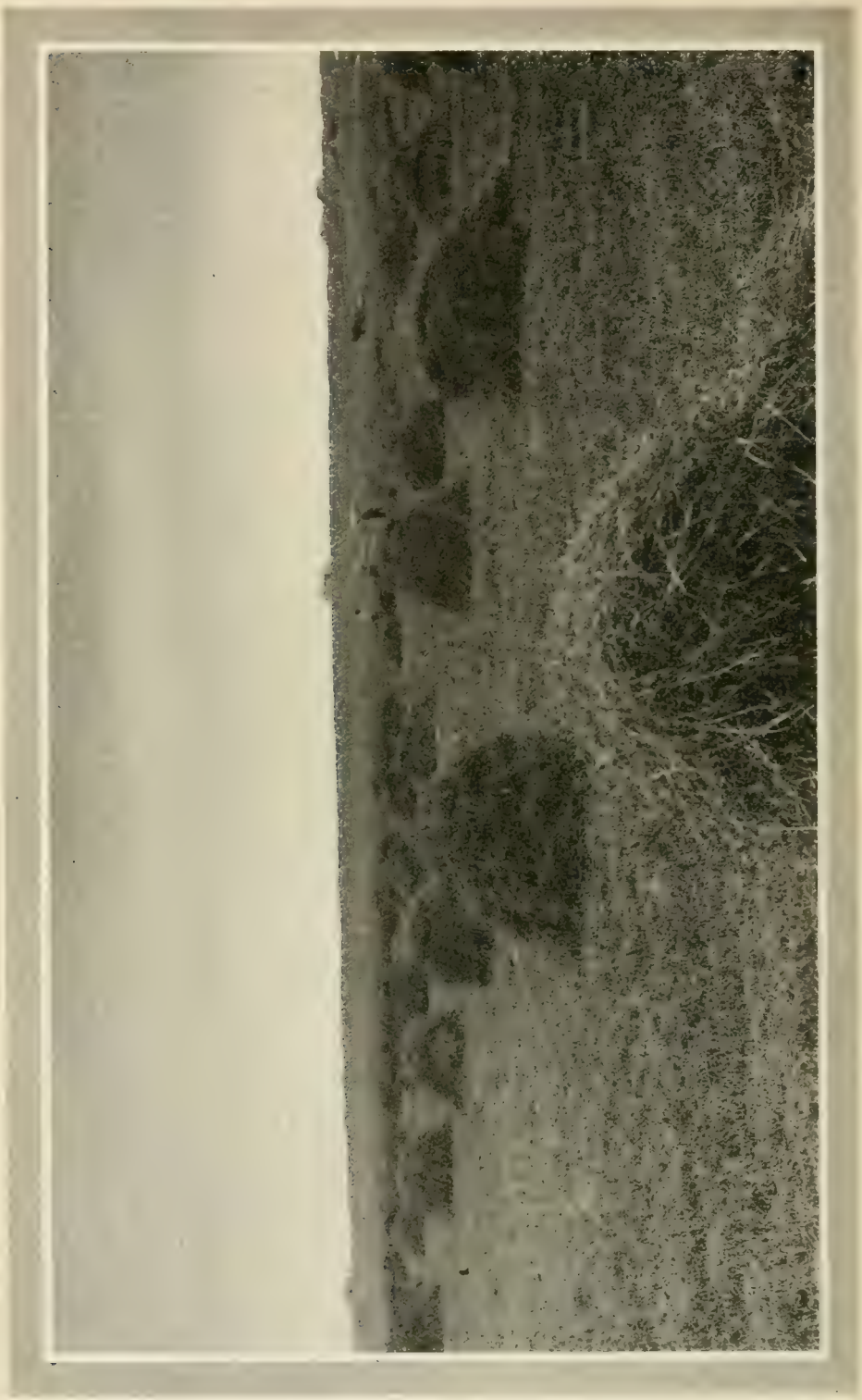
August 27th, A. Schiavone, extra gang laborer, had his leg and foot injured by a piece of the pit bank falling on him at Dane ballast pit.

September 8th, J. Louden, car inspector, North Bay, was struck on the head by a piece of ice which fell from the ice house platform.

October 7th, J. Sebreau, carpenter, North Bay, while putting sheeting on the stores building struck the first finger of his left hand with a hammer.

Respectfully submitted,

S. B. CLEMENT.



Hay Field, G. W. Slade, North Road, New Liskeard, Ont., 1915.

MOTIVE POWER AND CAR DEPARTMENT.

Annual Report for Year ending October 31st., 1915—Thos. Ross, Master Mechanic.

Shops.

Alterations have been made to the coach and carpenter shops at North Bay Junction, which have effected considerable improvement therein. Coach shop has now capacity for six coaches, with space for painters, upholsterer, storage, etc., whilst the addition to the woodworking machine shop has enabled us to locate the different machinery to much better advantage from the standpoint of efficiency and safety.

New Rolling Stock.

In June, 1915, contract was awarded to the Pullman Company for the construction of two steel baggage and express cars and two steel first class coaches, delivery to be made during the latter part of November, 1915.

The baggage and express cars are to be similar in all respects to those built in 1914. The two first class coaches, while of the same general construction as those at present in service, are to have a few minor alterations, as follows: A smoking compartment to seat sixteen persons; single 50 watt centre lamps; floor covered throughout with linoleum. For test purposes one car is being equipped with the Stone Company's axle generator and the other with the Safety Company's "Underframe" type generator; Edison batteries being used on both cars.

Arrangements are being made to equip the two steel second class cars, Numbers 221 and 222, with smoking compartments.

Official Car "Temagami":

The remainder of the work on the official car "Temagami" was finished in August, this car now being of practically all steel construction, with the exception of part of the interior finish.

Tank Cars for Fire Protection:

In June, 1915, four tank cars numbered 101, 102, 103 and 104, were purchased from the Imperial Oil Company, Sarnia, Ont. These cars have each been equipped with force pump, hose, pails, axes, shovels, etc., and are located at different points along the line, under the supervision of the section foremen, to be used for fire protection purposes at out-stations.

Electrical Work:

The transmission line to the carpenter shop at North Bay Junction has been rebuilt and a power circuit put in. The installation of electric drive for carpenter and machine shops, together with the rewiring of paint shop and the installation of electric lights in new carpenter shop, is now in hand.

Headlight equipments have been maintained in good condition throughout the year and in the case of engines undergoing general repairs in the shop, the

headlight dynamo, turbines, and wiring, have been given a thorough and complete overhauling and repair.

The equipments on all steel cars have had a general overhaul, which includes the dismantling and washing of all cells. This work is done at Cochrane.

At Englehart a new transmission line from the station to Blanche River has been built and a power pump installed for water supply. Motor drive has also been applied to Englehart machine shop. Electricity for light and power is purchased at a reasonable rate from the Charlton & Englehart Power Company.

A battery charging outfit has been installed in Cochrane for the purpose of recharging batteries on passenger equipment. Lights have also been installed on new platform at station.

In addition to the above work a large number of minor alterations, additions, repairs and renewals have been made from time to time as required (including the installation of fixtures in agents' and section houses) at stations along the line where electricity is used.

Air Brake Equipment:

In order to check up air brake operations, a Crosby Air Brake Recorder has been purchased. This instrument is designed for continuously recording the rise and fall of pressures used in the operation of the brake and from facts recorded on its charts may be deduced all sources of error. It will also show if proper discretion is exercised in the manipulation of same.

To eliminate moisture from trains and to provide what is generally termed "dry air," engines 106, 107, 108, 124, 134 and 151, have been equipped with cooling pipes between the first main reservoir and equalizing pipes between first and second main reservoirs. By cooling the air in this way it will prevent the accumulation of water in the air passages and piping on the locomotive, and in cold weather will overcome the freezing of the distributing valves and stopping up air passages, which ruins parts of the equipments by warping or bursting.

New standard foundation brake gear has been installed on the following engines, 106, 107, 108, 122, 123, 124, 125 and 126. This gear will maintain proper relation to the brake beam hangers at all times and insure even shoe wear.

The air brake equipment and foundation brake gear on cafe car "Wasaksima" has been re-arranged to conform to the Commonwealth steel trucks.

The air appliances for operating snow plows have been overhauled and put in good working condition for the coming winter.

All locomotives, with the exception of the four Consolidation engines, have been equipped with automatic wheel flange lubricators. This device has shown a substantial decrease in the cost of flange maintenance.

In addition to the above the following work has been carried out by the Air Brake Department:—

361 freight car brakes cleaned, repaired, oiled and tested.

124 passenger car brakes cleaned, oiled, repaired and tested.

106 freight car brakes cleaned, repaired, oiled and tested for foreign lines.

28 miscellaneous brakes, including vans, snow plows, steam shovels, boarding cars, etc., have been repaired and tested.

650 triple valves cleaned, oiled, repaired and tested.

71 nine and a half inch air compressors repaired.

5 eight and a half inch compound air compressors repaired.

1 motor driven compressor repaired.
66 distributing valves repaired and tested.
69 compressor governors repaired and tested.
81 engine brake valves repaired and tested.
144 feed valves cleaned, repaired and tested.
191 safety valves cleaned, repaired and tested.
47 air gauges repaired and tested.
34 locomotive steam gauges repaired and tested.
33 steam heat gauges repaired and tested.
29 steam heat regulators repaired and tested.
49 air signal equipments repaired and tested.
57 driver brake cylinders cleaned, oiled and tested.
255 angle cocks and cutout cocks repaired and tested.
36 funnel cocks for coaches repaired and tested.
30 bell ringers repaired and tested.

Also conductors' valves, retainer valves, steam heat regulators for coaches, slack adjusters, strainer checks, etc., have been repaired and tested as required.

Summary of Extensive Repairs to Locomotives:

Since November 1st, 1914, the following locomotives have been through our shops at North Bay Junction for repairs:—

Given heavy repair: 103, 104, 105 (twice), 108, 116, 118, 125, 129 (twice), 132, 138, 133.

Given general repair: 106, 107, 108, 109, 113, 123, 124, 125, 126, 128, 134, 135 and 151.

In March, 1915, engine 134 was returned from Kingston after being converted from simple to superheated engine. This is the last of the four Pacific type engines on which this alteration has been made. From the increased tractive power and decreased fuel consumption, this alteration has proved to be an economical investment.

During the year three engines belonging to Angus Sinclair, Contractor, of the C. N. R. construction, were put through our shops at North Bay Junction. Engine No. 607 was given a general rebuild. Engine No. 1012 was thoroughly overhauled, including new cab and running boards applied, tender frame straightened and reinforced, tender tank patched, and all new piping on engine. Engine No. 1107 had wheels removed and tyres turned besides other light repairs. Bills have been rendered against the contractor covering the cost of the above repairs.

Note: The term "Heavy Repair" as applied above, refers to cases where an engine has received such repairs as driving tyres turned, driving boxes renewed, valves, piston rings and side rod bushings renewed. "General Repair" refers to cases where an engine has been given a thorough overhauling and rebuild.

Each engine has had the boiler washed out once every two weeks when in regular service. Staybolts in fire boxes have been regularly tested and renewals made when necessary. Nettings, ash pans and dampers have been examined at the end of each trip during the summer, as a precaution against fire. During damp weather and at such times as the danger from this source is reduced to a minimum, ash pans and dampers have been examined twice a week.

Engine Dispatch:

Statement showing the number of engines dispatched from different terminal and divisional points during the year:—

Station.	Number of Engines Dispatched.
North Bay Junction	5,134
Elk Lake	368
Englehart	3,267
Timmins	926
Iroquois Falls	335
Cochrane	1,134
Total	11,164

The motive power has been generally assigned during the year as follows:—

Class of Service.	Number of Engines.
Passenger	13
Freight	23
Work	3
Switching	4

Locomotive Mileage:

The following statement shows the mileage made by locomotives belonging to this railway during the year:—

Engine No.	Miles Run.
101	30,426
103	29,421
104	25,088
105	23,281
106	12,536
107	30,763
108	27,188
109	8,744
110	32,609
111	19,908
112	13,873
113	18,665
114	29,660
115	34,201
116	34,444
117	2,051
118	6,948
119	18,076
120	32,465
121	29,847
122	22,498
123	15,534
124	2,517
125	9,531
126	12,173
127	39,674
128	31,042
129	34,239
130	3,034
131	29,929
132	26,404
133	40,789
134	43,367
135	39,909

136	58,574
137	43,923
138	33,532
139	24,926
140	41,227
150	12,112
151	21,896
152	270
153	31,965
Total	1,079,259

Repairs to Passenger Equipment:

Extensive repairs have been made to passenger equipment at North Bay Junction shop as follows:—

Class of Car.	General Repair.	Light Repair.
First Class	3	2
Second Class	3	2
Combination	1	..
Baggage and Express	1	..
Mail and Express	1	1
Parlor Cafe Cars	..	2

The term "General Repair" as applied above refers to cases where a coach has had the interior scraped and sanded; sashes removed and refitted; mouldings removed and replaced in interior of car; seats removed and replaced; outside sheathing stripped off, panels removed, side of coaches trussed and replanked; piers strengthened; letter board removed and replaced; vestibule ends reinforced with iron plates; trucks rebuilt; transoms, end sills and trimmers renewed; journal boxes and brasses renewed and wheels turned.

The term "Light Repair" refers to coaches having seat arms scraped and sanded; interior of car varnished; outside of car washed down and given two coats of varnish; trucks repaired.

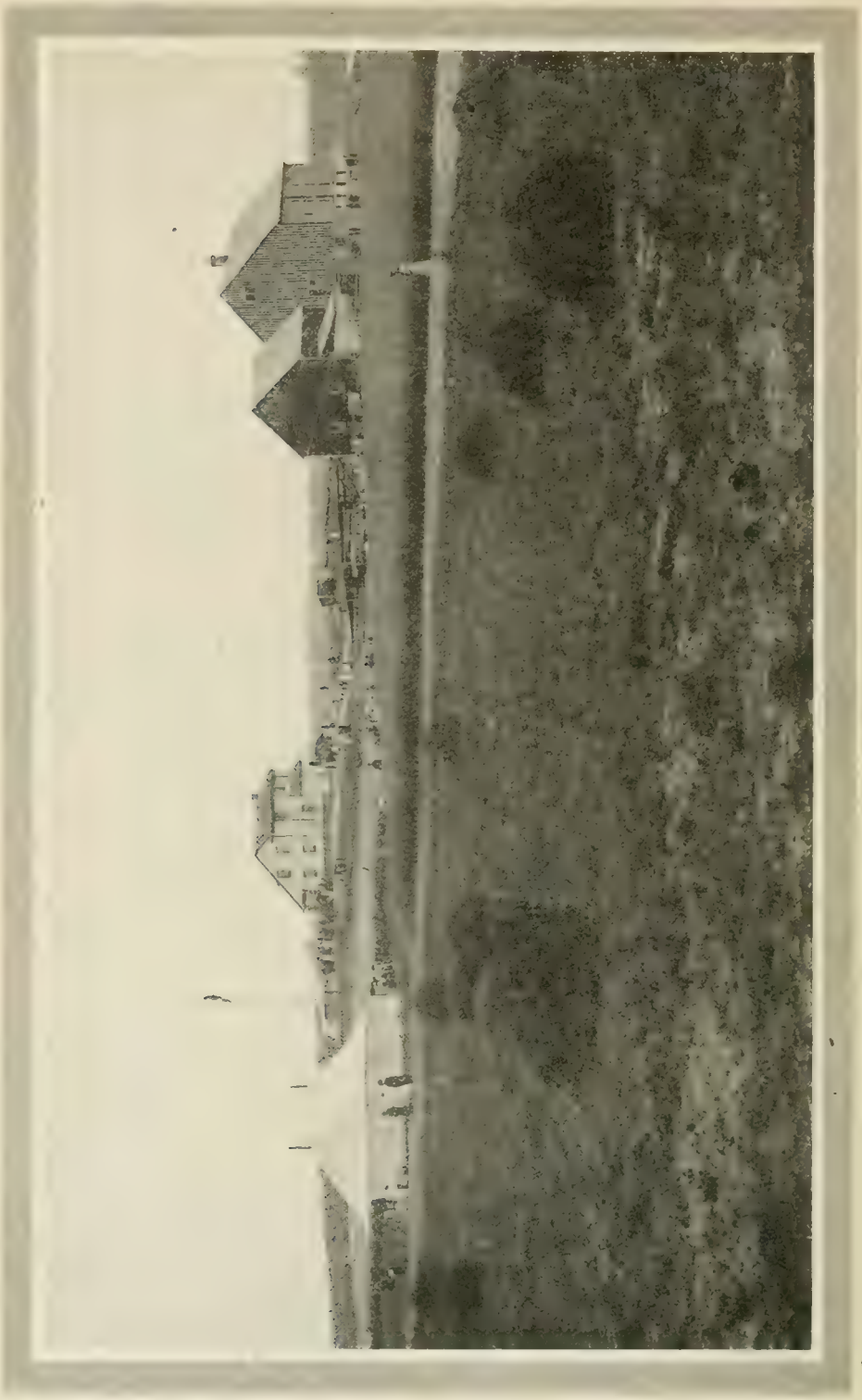
No extensive repairs have been necessary to official cars "Sir James" and "Abitibi," the ordinary maintenance or running repairs only having been taken care of as required.

Pay car No. 44 and exhibition car have each received a light repair.

Parlor cafe car "Wasaksima" has been overhauled and equipped with steel trucks similar to those being used under the new all steel passenger equipment. In order to maintain as far as possible this type of truck as standard, it is the intention to equip with same all passenger cars which are of recent design and have steel underframe.

Arrangements are being made to equip cafe car "Sesikinika" with electric light, The Safety Company's "Underframe" type of equipment with Edison storage batteries being used.

All wooden passenger coaches which have undergone heavy repairs have been equipped with friction draft gear and friction buffing gear. Steel side sills have been applied to first class wooden coach 109 and also to baggage and express and combination cars, the centre sills also being reinforced.



Oats, Hay, etc., Government Demonstration Farm, Monteith, Ont., 1915.

Coach Cleaning:

Statement showing the number of coaches cleaned at the different stations during the year:—

Station.	Number of Coaches Cleaned.
North Bay Junction	2,860
Englehart	4,327
Cochrane	3,018
Timmins	1,102
Elk Lake	630
Iroquois Falls	597
Total	12,534

Repairs to Conductors' Vans:

During the year eleven conductors' vans have been put through the shop, receiving a thorough overhauling and repair, also being repainted inside and outside. In addition, each van as it goes through the shop, has been fully equipped with standard safety appliances.

Repairs to Freight and Work Equipment:

During the year two flat cars numbered 60237 and 60113, which had previously been destroyed, were rebuilt and returned to service.

Since Nov. 1st, 1914, eighty-two cars have had new sills applied and seventy-three flat cars have been redecked.

As fast as the T. & N. O. freight equipment is available, safety appliances, consisting of hand holds, grab irons, steps, ladders, running boards, couplers, brakes, etc., are being altered to conform to the United States safety appliance standards. The lettering on all T. & N. O. freight equipment is also being altered and when completed will bear the reporting marks "T E M" in addition to the regular lettering.

Nine thousand seven hundred and thirty-five (9,735) cars have been repaired for foreign roads and bills covering the cost of repairs have been rendered against the car owners, in accordance with the standard code of rules governing the conditions of repairs to freight cars for the interchange of traffic, adopted by the Master Car Builders' Association. In addition to the above, bills have been rendered monthly against the Grand Trunk Railway System covering the cost of repairs to twelve thousand three hundred and fifty-four (12,354) cars, under the terms of the Grand Trunk Running Rights Agreement, at actual cost of labour and material plus 10 per cent.

Snow plows, snow flangers have been overhauled, repaired and repainted. All other work equipment, including wrecking cranes, steam shovels, ditchers, pile driver, etc., have been given such repairs as were required to keep them in good running order.

Steel Tyres Turned and Wheels Applied to Rolling Stock:

During the year 36 pairs of driving wheel tyres for T. & N. O. Railway, and three pair driving wheel tyres for Contractor Angus Sinclair, also 1 pair of idler wheels, 2 pair tyres for Nipissing Central Railway, 22 tender wheels, 16 pair engine truck wheels, 167 pair coach tyres and one pair freight car tyres have been turned on the wheel lathe at North Bay Junction.

The following tyres were bored out before being applied to wheels: 12 pair driving tyres, 35 pair coach tyres, 2 pair tyres for Nipissing Central Railway, 7 pair tender tyres and 8 pair of engine truck tyres.

At Englehart shop, 514 car wheels have been pressed off axles, new wheels bored and remounted on axles.

New wheels have been applied to rolling stock on the T. & N. O. Railway as follows:

To Locomotives:

5 pairs 33" C.I. wheels on 3¾ x 7" axles.
1 " " " 4¼ x 8" "
87 " " " 5 x 9" "
30 33" tender truck tyres.
24 57" main driving tyres.
24 28" engine truck tyres.
6 51" main driving tyres.

To Passenger Equipment:

59 36" steel tyres.
132 pairs of wheels changed and tyres turned.

To Freight Equipment:

5 pairs 33" C.I. wheels on 3¾ x 7" axles.
108 " " " 4¼ x 8" "
26 " " " 5 x 9" "
33 " " " 5½ x 10" "

To Ballast Cars:

41 pairs 33" C.I. wheels on 4¼ x 8" axles.

To Van, Work and Other Service Equipment:

17 pairs 33" C.I. wheels on 3¾ x 7" axles.
1 " " " 4¼ x 8" "
7 " " " 5 x 9" "

To Foreign Cars:

28 pairs 33" C.I. wheels on 3¾ x 7" axles.
980 " " " 4¼ x 8" "
197 " " " 5 x 9" "
91 " " " 5½ x 10" "

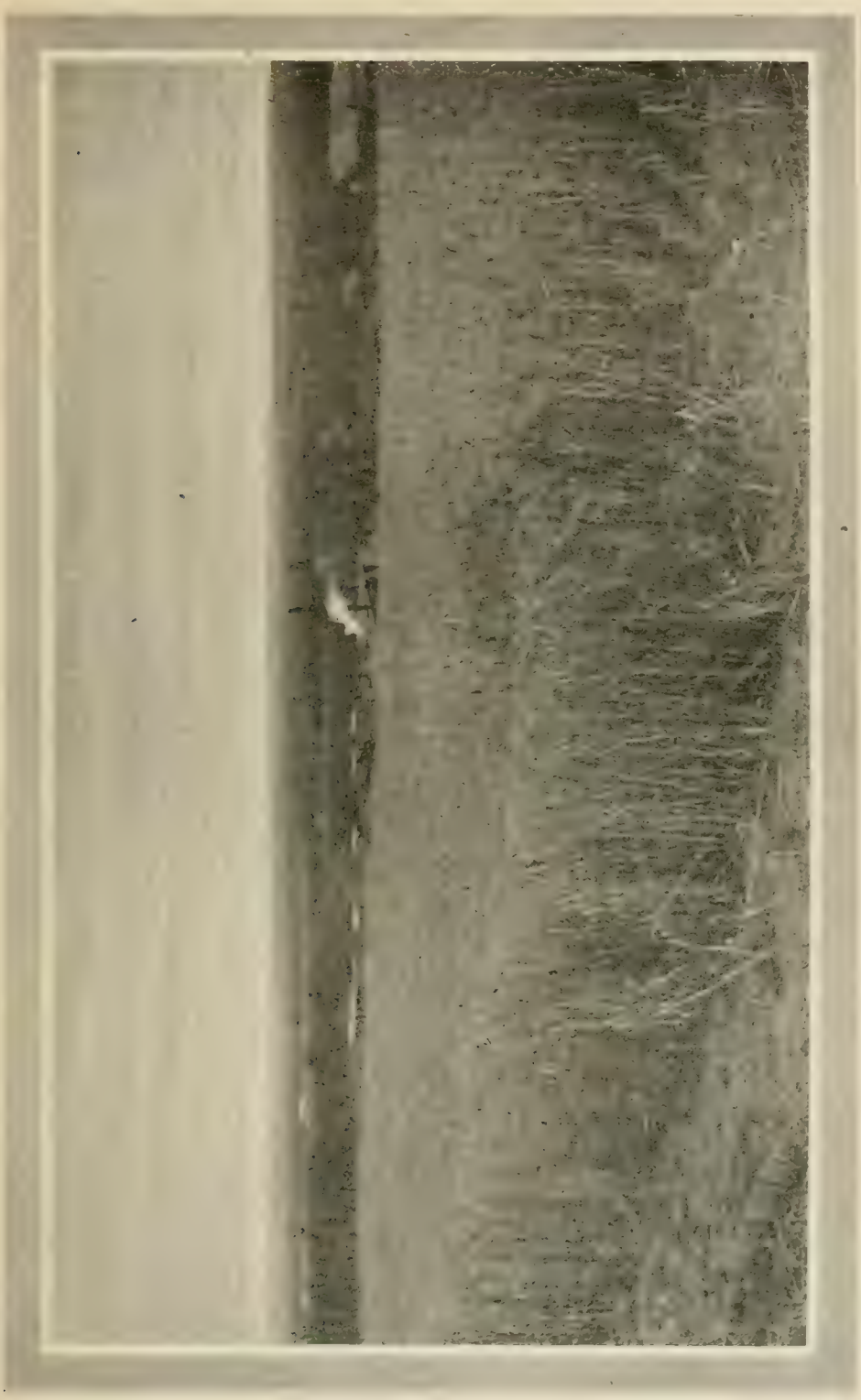
Rolling Stock Destroyed:

The past year has been exceptionally free from bad wrecks, fires, etc., the only car destroyed on the line being G. T. R. 24349, which was destroyed at Haileybury July 13th, 1915, by fire. Salvage from this car has been returned to owners and credit covering same is being allowed this railway on bill rendered by owner.

Work Turned Out of Carpenter Shop:

The following miscellaneous articles have been manufactured and turned out of carpenter shop at North Bay Junction in addition to material for repairs to rolling stock:

14 office chairs repaired.
14 step ladders.
2 towel rollers.
550 pieces standard explosive blocking.



Barley Cut August 2nd, 1915, Farm of Wm. Schell, Pack Township.

800 feet of standard explosive blocking.
55 mile boards.
120 transfer cases.
24 standard trespass signs.
2 fourteen ft. ladders.
18 gang planks.
36 freight trucks repaired.
6 baggage trucks repaired.
3 hand trucks repaired.
5 conductors' tool boxes.
1 conductor's stationery box.
2 conductors' tool boxes repaired.
1,000 grade stakes for engineering department.
800 centre stakes for engineering department.
36 battery box lids.
48 sets of cattle guards.
12 large sections of cattle guards.
1 blackboard for Englehart shop.
5 yard limit signs.
1 book case.
1 stationery cabinet.
72 flanger markers.
53 sign boards.
1 table for van repaired.
12 motor frames.
1 oil skid.
3 equipment boxes.
1 draughting table for general office.
12 switch handles.
276 cedar posts for garden fence turned.
1 card case.
1 wheel barrow repaired.
48 vent plugs.
28 bottom blocks.
1 ice box.
182,327 track shims.

Pattern Making:

During the year there have been seventy-nine patterns manufactured at the pattern shop at North Bay Junction for repairs and renewals of different parts of locomotives, cars, work equipment and shop machinery. All patterns are the property of this railway and a proper record is kept as to the location of same.

Equipment Owned:

The motive power, rolling stock and equipment of this railway at present consists of the following:—

39 road locomotives.
4 switching locomotives.
3 official cars.

1 pay car.
14 first class wooden coaches.
3 first class steel coaches.
15 second class wooden coaches.
2 second class steel coaches.
3 combination first and second class steel smoking cars.
2 combination wooden second class and baggage cars.
1 exhibition car.
3 parlor cafe cars.
5 wooden baggage and express cars.
2 steel baggage and express cars.
5 wooden mail and express cars.
3 steel mail and express cars.
1 fish car.
23 conductors' vans.
10 stock cars.
146 box cars.
98 steel underframe flat cars.
367 wooden flat cars.
12 steel drop bottom dump cars.
17 Hart convertible cars.
3 snow plows.
3 snow flangers.
3 right hand ballast plows.
3 left hand ballast plows.
3 centre ballast plows.
1 Jordan ballast spreader.
1 centre ballast spreader.
3 Lidgerwood rapid unloaders.
1 pile driver.
1 American railroad ditcher.
2 steam cranes.
3 steam shovels.
2 auxiliary boarding cars.
2 auxiliary tool cars.
2 Road Department auxiliary tool cars.
2 crane cabin cars.
2 road cabin cars.
1 pile driver tank car.
8 boarding cars.
4 tank cars for fire protection.

T. & N. O. Railway Station at Englehart, September, 1915.

TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION ANNUAL REPORT, ROAD DEPARTMENT

Year Ending October 31st, 1915

WM. YOUNG, GENERAL ROADMASTER.

Maintenance of Track and General Remarks.

Owing to the reduction in traffic throughout the country, railways were forced to curtail expenditure for maintenance and improvements. Many main line section gangs were reduced as were nearly all branch line sections. On sections where tie renewals were heavy the work was done largely by extra gangs.

Tie renewals on the First Division have decreased 22.6 per cent. from last year and the estimates for 1916 indicate a decrease of 8 per cent. from this year's figures. On the Second Division tie renewals remained practically the same as in 1914, but estimates for 1916 indicate an increase of 13 per cent. over this year.

In consequence of the reduced forces the time of section gangs was almost exclusively devoted to maintenance of track, which, however, has been maintained in a safe-running condition, as evidenced by the very small number of main line derailments, which goes to show that the track and rolling stock have been closely watched for the safety of the travelling public and property of the railway.

Some improvements have been made in localities by replacing eight foot cross ties in track over muskeg formation with ten foot ties, and by the application of additional rail anti-creepers, which have had a decidedly beneficial effect. The work of reballasting, cleaning right-of-way and rail renewals have decreased, but the work of widening narrow embankments and filling of timber trestle bridges has progressed more than the average of former years; in fact, timber trestle bridges on the line are fast disappearing, three large ones having been filled this year.

New Steel Laid.

From M.P.	To M.P.	Miles.	Description.	Maker, etc.
30.34	33.75	3.41	A. S. C. E. 80-lb.....	Algoma Steel Co., Year 1915
61.36	61.65	0.29	do	do do
		3.70		

Old Steel Released.

30.34	33.75	3.41	A. S. C. E. 80-lb.....	Cammell, Sheffield, England. Year 1903.
61.36	61.65	0.29	do	Cammell, Sheffield, England, Year 1904.
		3.70		

The new steel was coupled with "Continuous" rail joints.

Received 1,006.84 tons new 80-lb. A.S.C.E pattern steel from Algoma Steel Corporation, Sault Ste. Marie, Ont., during the year for main line renewals, First Division.

The better class of rail released from track, known as Class No. 1 relay, is used for renewals elsewhere in main tracks. Class No. 2 relay is used for new sidings, etc. In this way main track receives the benefit of new steel.

Other Rail Removed from Track—Account Failures and Wear.

Description and Remarks.	No. Rails.	Lin. Feet.	Make.
Failures.			
Clean break, cause unknown	36	1172	Algoma
	45	1483	D. I. & S.
	6	198	Cammell.
Break, old flaw in base	9	297	Algoma
Break, old flaw in head	1	33	D. I. & S.
	1	33	D. I. & S.
Break, end bolt holes, no flaws found	1	33	Algoma
Break, end bolt holes, due to old flaw	1	33	Cammell.
Break, due to introduction of heavy power and severe cold	1	33	Algoma.
Break, old flaw in web	19	627	D. I. & S.
	2	66	D. I. & S.
	122	4008	
Other rail removed, account general wear, the causes being chiefly crushed and split heads		14235	
Total Lineal Feet Removed		18243	
Total Gross Tonnage		217.18	
Equivalent in Track Miles		1.73	

Cross Ties Used.

	Eight Feet. 1st and 2nd Quality.	Culls.	Ten Feet.
Renewals, Main Line and Sidings			
North Bay	687	1,750	
" (Creosoted, Birch)	305		
Renewals, Main Line, First Division	31,399	425*	4,275
" " " Second "	46,288	460*	2,033
" Sidings, First Division	2,724	890	
" " Second "	2,227	2,930	
" Porcupine Sub-division, including Iroquois Falls Branch	220		
" Elk Lake Branch	20		
" Charlton "	2,627		
" Kerr Lake " (Under lease to N. C. Rly.)	1,616		
" Second Main Track " " " "	467		
" Nipissing Central Railway	237		
" Private sidings	32	440	
Extras, First Division	263		
" Second "	63		
" Porcupine Sub-division	106		
" North Bay yard sidings		103	
New T. & N. O. sidings (Including pits)	3,973	3,018	
" Private sidings	1,247	1,091	
Destroyed by fire	2,552	210	
Totals	97,053	11,317	6,308

*Released ties.

Sets of Switch Ties Used.

	Frog Number.			
	No. 6	No. 8	No. 10	No. 11
Renewals, T. & N. O. switches	1	22	1	4
" Private switches				
New T. & N. O. sidings, etc		23		1
New Private sidings		6		
Totals	1	51	1	5

Set ties for No. 6 frog contains 428 lin. feet 7 in. x 9 in. timber.
Set ties for No. 8 frog contains 502 lin. feet 7 in. x 9 in. timber.
Set ties for No. 10 frog contains 577 lin. feet 7 in. x 9 in. timber.
Set ties for No. 11 frog contains 717½ lin. feet 7 in. x 9 in. timber.

New Under Culverts

Location.	Size.	Length.	Description.	Purpose.
M. P. 12½	12 inches	30 feet	Corrugated Iron Pipe	Right-of-way drainage.
M. P. 17½	12 "	30 "	" " "	" "
Chamberlain	24 "	57 "	Concrete Pipe	Main line and siding.
S. Porcupine	12 "	22 "	Corrugated Iron Pipe	Main line.
" "	15 "	54 "	" " "	Main line and roadway.

New Side Culverts.

North Bay	30 inches	51 feet	Concrete Pipe	Yard drainage. Installed to make burning ground for Car Dept. refuse.
M. P. 114	24 "	30 "	Corrugated Iron Pipe	Replacing wooden culvert.
McCool	12 "	90 "	" " "	Releasing 24 inch pipe under station roadway.
Bourkes	24 "	30 "	Concrete Pipe	New station roadway.
"	15 "	75 "	" "	New road crossing.
M. P. 214½	24 "	57 "	" "	" "
Porquis Jct.	12 "	30 "	Corrugated Iron Pipe	Under road crossing to freight shed.
Nahma	15 "	75 "	Concrete Pipe	Road crossing.
Cochrane	2 ft. x 2 ft.	30 "	Timber	Crossing 5th Street.
"	2 ft. x 2 ft.	30 "	"	" "
IroquoisFalls	12 inches	30 "	Corrugated Iron Pipe	Front of hand-car house.
"	24 "	87 "	Concrete Pipe	Extension culvert, drainage station grounds.
Jacinto	15 "	150 "	Corrugated Iron Pipe	Drainage station site.
Keys	14 in. x 20 in.	20 "	Timber	Private crossing.
"	14 in. x 20 in.	20 "	"	" "
"	15 inches	30 "	Corrugated Iron Pipe	Front shelter station.

New Tile Drains.

Location.	Size.	Length.	Description.	Purpose.
M. P. 9½..	6 inches	561 feet	Vitrified Tile.....	Underdrainage wet cut.
M. P. 9¾..	6 "	594 "	" "	" "
M. P. 153½..	6 "	200 "	" "	Drainage station landing.
"	6 "	325 "	" "	Drainage new siding.
"	8 "	37 "	Corrugated Iron Pipe....	Off-takes at ends of 6 inch tile drains.
M. P. 218 ...	6 "	1,584 "	Vitrified Tile.....	Underdrainage wet cut, west side.
"	8 "	30 "	Corrugated Iron	Off-take, above.
"	6 "	1,570 "	Vitrified Tile.....	Underdrainage wet cut. east side.
"	8 "	30 "	Corrugated Iron.....	Off-take, above.
M. P. 219¾..	6 "	789 "	Vitrified Tile.....	Underdrainage wet cut, west side.
"	6 "	454 "	" "	Underdrainage wet cut, east side.
Porquis Jct.	6 "	375 "	" "	Drainage mechanical coaling chutes plant, and cellar section dwelling.
" "	6 "	1,070 "	" "	Underdrainage wet cut, yard drainage, freight shed siding.
" "	8 "	7 "	Corrugated Iron.....	Off-take, above.
" "	6 "	649 "	Vitrified Tile.....	Underdrainage wet cut, yard drainage, east of main line.
" "	8 "	7 "	Corrugated Iron.....	Off-take, above.
Iroquois Falls	6 "	484 "	Vitrified Tile.....	Underdrainage wet cut, at engine shed.
" "	8 "	7 "	Corrugated Iron.....	Off-take, above.
" "	6 "	1,070 "	Vitrified Tile.....	Underdrainage wet cut. station grounds drainage.

9,843 feet.....1.86 Miles.

Cinders Handled.

Cochrane.

Cars.	Where Unloaded.	Purpose.
16	Cochrane	Station and shed grounds and roadways.
1	"	New crossing, 5th Street.
20	"	Ballast and filling in yard.
4	"	Widening dumps.
3	"	Ballasting, new entrance.
1	"	Donation to Ontario Women's Institute, Cochrane Branch.
1	Nahma	Filling around shelter station.
1	"	Ballasting.
47		

Timmins.

5	Timmins	Ballasting extension "Y," for Hollinger mine.
1	"	Roadway at "Y."
1	"	Ballasting yard.
9	Schumacher	Widening dumps and ballasting sidings.
3	M. P. 38	Road crossings.
2	M. P. 39	Widening dumps.
5	M. P. 36½	Widening dumps.
1	South Porcupine ...	Ballast.
3	Porcupine	Filling station grounds.
1	Iroquois Falls	Station roadway.
31		

Miscellaneous Materials Handled by Work Trains.

Cars.		Material.	Purpose.
Loaded.	Unloaded.		
2	88	Ties	Renewals.
5	3	"	Sidings, Dane Pit.
1	1	Rails	" "
2	29	"	Renewals.
		Ties and rails.....	Old sidings removed, Doherty Pit.
	1	Rails	Pit sidings.
	1	Shims	Shim supply.
	2	Scrap tin and rubbish	Filling bridge M. P. 71.37.
	1	Gravel	Supplied B. & B. Dept. for bridge M. P. 164½.
	2	Siding materials.....	New siding, M. P. 233.
10	128		

Salmon Trout caught at Lake Reuben, Mileage 58.75, by A. A. Fraser, Bert Holbrook, and Victor Galarneau.

A Scene on the Mattagami River. Photograph taken by a Prospector.

Material Handled by Work Train with "American" Railroad Ditcher.

Cars. Loaded.	Cars. Unloaded.	Material.	Purpose.
35	35	Clay	Grading transfer sidings, Iroquois Falls.
57	57	"	Grading freight shed siding, Porquois Jct.
254		"	Cleaning cuts, etc., Porcupine Branch.
1372		"	" " main line.
80		"	" " Charlton Branch.
150		"	" " Elk Lake Branch.
116		"	" " Iroquois Falls Branch.
	1265	"	Widening embankments, main line
	70	"	" " Charlton Branch.
	150	"	" " Elk Lake Branch.
	292	"	" " Porcupine Branch.
	35	"	Filling New Liskeard spur.
	96	"	Widening, Iroquois Falls Branch.
	20	"	Filling, Jacinto station site.
	34	"	Filling for crossing, Ramore.
20	30	"	Grading for extension of tail of "Y," Timmins, for Hollinger Gold Mines Co.
33	33	Earth and muck	Station lawn, Earlton. Loaded M.P. 12, E.L.B.
44	44	Muck	Cleaning cuts, Iroquois Falls Branch and dressing slopes at Nushka.
3	3	Ballast	Haileybury shed siding changes.
170	170	"	Roadway, McCool station.
148	148	"	Roadway, Osseo station.
14	14	"	Filling for station lawn, Elk Lake.
	4	"	Extension platform, Chamberlain station.
	4	"	Extension platform, Wabewawa.
	10	"	Crossing, M. P. 214½.
10	10	"	Station platform, M. P. 209.
10	10	"	" " Nushka.
15	15	"	" " Homer.
30	30	"	Ballast, M. P. 205¾.
26	26	"	Ballast, M. P. 201¼.
6		"	Supplied Town of Cochrane for streets.
	4	"	Ballast, M. P. 219¾.
49	49	Sand	Filling culvert M. P. 1.44. } Taken from cuts
85	85	"	" " 4.81. } M.P. 1½, 8 and 11.
72	72	Boulders	Rip-rapping, New Liskeard spur.
91	91	Stone	" " "
213	12	Ties	Renewals, year 1915.
21	8	"	" " 1916.
1	1	"	Clean-up and storage.
3		"	Rejected and bad ties, for station firewood.
2		"	Surplus, construction Cochrane terminals.
	5	Rails	Storage, released from Diver spur.
38	11	"	Renewals.
1		"	Surplus, extension Liskeard spur
6		" & fastenings	Surplus, Construction Cochrane terminals.
1		Scrap	Clean-up.
	3	Cont. Joint and bolts	Renewals.
2	2	Concrete decks	From culverts M. P. 1.44 and 4.81, which were converted from beam to concrete pipe type. Decks stored at North Bay.
2	2	Sdg. Materials	New siding, M. P. 153½, Boston Creek.
3		Piles	Surplus, construction extension Liskeard spur.
3		Bridge timber	Released from filled bridges, M. P. 25.71 and 71.37.
2		"	Released from filled bridge, M. P. 163.3.
3188	2950		

Material Handled by Work Train with "American" Railroad Ditcher.—Continued.

Cars. Loaded.	Cars. Unloaded.	Material.	Purpose.
3188	2950	*Forward*	
1		Bridge timber	From culvert M. P. 42.18.
2		"	Released from filled bridge approaches, M. P. 119.13.
8		"	Released from filled bridges, M. P. 48.90, 55.94, 57.31, 58.75, and 59.41.
	1	Cattle guards	Renewals.
1		Plank	Old station platform, Bourkes.
2	3	Telegraph poles.....	Clean-up and storage of same.
2		"	From abandoned telegraph line, old main line at Cochrane.
6	6	Old telegraph poles.	From re-constructed telegraph line, M. P. 37-49, for cross-logging at sink hole, M. P. 45½.
.....	4	Cinders	Tile drainage, M. P. 219½.
2	2	"	Ballast.
.....	5	"	Station platform, Monteith.
.....	3	"	Roadways, Cochrane.
.....	1	"	Filled culvert, M. P. 1.44.
.....	1	"	" " 4.81.
1	1	" & ballast.....	Stop-block, New Liskeard spur.
1	1	" "	Freight shed siding changes, Haileybury.
3,214	2,978		

Track—Re-Surfaced.

Main Line.

Between— M.P.	& M.P.	Average Lift.	Miles	Remarks.
		inches.		
37.75	39	3	1.12	
44	45.5	3	1.43	
46	47	6	0.66	At sink hole.
56	62	6	6.00	
71	72	8	0.71	At filled bridge.
121	123	3	1.91	
164	169	9	4.19	
172	176	3	4.00	
177	182	4	3.24	Patch-work.
183	190	2	3.00	" "
191	194	2	0.41	" "
196	198	2	1.81	" "
		4.25	28.48	

Main Track Re-aligned and Curves Spiralled.

From M.P.	To M.P.	Average distance moved.	Total Miles.
26	34	4 in.	8

Ballast, Loaded by Steam Shovel, Pit M. P. 24¾.

Cars.	Purpose.
905	Filling bridge, M. P. 25.71..
16	Filling bridge approaches, M. P. 48.90.
129	Widening embankments, M. P. 28 to 34.
15	Filling at new site, Loundsburys station.
1,065	

Ballast, Loaded by Steam Shovel, Pit M. P. 58½.

Cars.	
918	Widening embankments between M. P. 55¾ and 67.
289	Filling bridge, M. P. 71.37.
204	Widening embankments at filled bridge, M. P. 71.37.
17	Filling beam culverts, M. P. 78.60, 78.78, 79.66 and 80.45.
749	Ballasting main line, M. P. 56 to 64.
34	" " M. P. 45 to 46.
51	" " M. P. 38 to 39.
34	" " M. P. 121 to 123.
34	" " M. P. 131 to 132.
17	Rip-rapping, New Liskeard wharf spur.
17	Ballasting, New Liskeard wharf spur.
19	Filling approaches to culvert, Englehart yard.
10	Supplies B. & B. Dept. for concrete work, culvert M. P. 163.3.
3	Filling culvert approaches, M. P. 11 and 11½, main line.
40	Ballasting east yard, North Bay Junction.
2 (Harts)	" " "
7	Supplied B. & B. Dept. for manufacture of concrete pipes, North Bay.
1 (Hart)	" " " " " "
4	" " concrete work, culvert 163.3 M. P.
2 (Harts)	" " culverts, M. P. 1.44 and 4.38, main line.
2,452	

Ballast, Loaded by Steam Shovel, Doherty.

Cars.	
127	Filling slide, north end, Cobalt Lake.
1,842	Filling bridge, M. P. 71.37.
119	Widening embankments over filled bridge, M. P. 71.37.
1,308	" " M. P. 64 to 77.
91	Filling beam culverts, M. P. 78.60; 78.78, 79.66 and 80.45.
17	Filling washout, New Liskeard wharf spur.
17	Ballast, Temagami yard.
2	Filling road crossing at station, Thornloe.
3,523	

Ballast, Loaded by Steam Shovel, Elk Pit.

Cars.	Purpose.
719	Filling and ballasting, also filling for roadways and station grounds, siding changes, Earlton, and new station lay-out.
15	Filling around section tool-house, Earlton.
157	Filling water holes through Thornloe yard.
46	Ballasting Canadian Pulp & Lumber Co.'s siding, Latchford.
87	Rip-rapping, New Liskeard wharf spur.
261	Filling New Liskeard wharf spur extension.
15	Ballasting siding M. P. 115½ (repairs).
14	" siding, M. P. 122 (repairs).
45	" main line, M. P. 132 to 133.
30	Widening main line embankments, M. P. 137 to 138.
75	Ballasting, M. P. 19 to 22½, Elk Lake Branch.
15	Widening at filled trestle, M. P. 27, Elk Lake Branch.

Ballast, Loaded by Steam Shovel, Elk Pit—Continued.

Cars.	Purpose.
30	Filling roadway at town siding, Uno Park.
6	" " Heaslip.
4	" " at siding, M. P. 133.
58	" " at Mountain Chutes siding.
71	" " and station grounds, Osseo.
30	" " " " " McCool.
87	" " " " " Wabun.
175	" " at Chamberlain siding.
60	" " at Good's siding (now Leeville), Elk Lake Branch.
28	Filling and ballast, extension Good's spur, Elk Lake Branch.
7	Supplied Village of Thornloe for town streets.
60	Filling and ballast, extension Wabewawa spur.
25	Road crossing, M. P. 6½, Elk Lake Branch.
4	Filling at hand-car house, Kenabeek.
2	Filling at hand-car house, Heaslip.
3	Tile underdrainage, M. P. 133.
15	Filling at culvert, M. P. 162¾, where cinder filling burnt out.
3	(Hand loaded) Locomotive sand.
2,147	

Ballast, Loaded by Steam Ditcher, Elk Pit.

Cars.	Purpose.
3	Ballasting, Haileybury shed siding changes.
170	Filling roadway at McCool siding.
148	" " at Osseo siding.
14	Filling for station lawn, Elk Lake.
335	

Ballast, Loaded by Steam Shovel, Dane Pit.

5,294	Filling trestle, M. P. 163.3.
916	Ballasting main line, M. P. 162 to 182.
786	Widening embankments, M. P. 162 to 169.
252	Covering cross-logging and widening embankments, M. P. 179.
18	Filling under Long Lake spur bridge, Charlton.
72	Ballasting Kenogami siding.
18	Widening, Kenogami siding.
36	Filling beam culvert, M. P. 137.15.
180	Filling roadway at Bourkes station.
18	Filling road crossing Bourkes.
36	Widening embankments, M. P. 179 to 180.
36	Raising sag, M. P. 167½.
18	Filling bridge approach, M. P. 179.
2	" " " M. P. 164½.
7,682	

Ballast, Loaded by Steam Ditcher, Watahbeag.

Cars.	Purpose.
10	Filling for station platform, Watahbeag.
10	" " " Nushka.
15	" " " Homer.
30	Ballasting, M. P. 205¾.
26	" M. P. 201¼.
6	Supplied Town of Cochrane for streets. (Loaded by hand).
97	

Stone, Loaded by Hand, Barber's Bay.

11	Station and freight shed roadway improvements, Iroquois Falls.

Sidings Laid and Extended.

Location	Description.	Purpose.	Length.
North Bay	Extension carpenter shop siding No. 10	Car repairs...	107
	" " " No. 11	" ...	33
	" " " No. 12	" ...	107
	Boarding car storage spur	Car storage..	1,100
	Cinder dump spur	Cinders	550
M. P. 24¾	Pit sidings, extended	Ballast	198
M. P. 58½	" "	"	1,406
M. P. 73.7	Milne & Sons siding, extended (Milnes performed work)	Lumber	251
Cassidy	Through siding, extended	General	217
	Old pit siding, extended	Ballast	280
Earlton Jct.	New through town siding	General	754
	Elk Lake branch main line extended to new station	"	1,402
M. P. 18¾ Elk Lake Branch	Good's private spur extended to through siding for public use	"	438
Chamberlain	Through siding extended	"	207
M. P. 153½	Public spur, Boston Creek	"	349
Dane	Pit sidings, extended	Ballast	1,176
Porquis Jct.	Mechanical coaling plant siding, partially laid	Coaling engs..	450
Nellie Lake	Water tank spur, extended	Watering engs.	29
M. P. 233	Public Spur	General	578
M. P. 245½	Public spur, extended	"	362
Cochrane	T. C. R. Connection east of station	"	366
	T. C. R. Connection at diamond crossing	"	325
Iroquois Falls ..	Transfer siding No. 1	"	2,872
	" " No. 2	"	1,390
	" " No. 3	"	1,152
	Coal spur at A. P. & P. Co. mill, extended	Coal Storage .	175
M. P. 11 Porcupine Sb-Dv.	M. Holgevac's spur	Pulp	251
M. P. 23	Crawford & Levinson's spur	"	277
Timmins	Marshall-Ecclestone, Ltd., spur	Supply	528
	Tail of "Y," extended for Hollinger Mines Co.	Mining	99
	Main Spur, Hollinger Mining Co.	"	2,079
	Short Spur, " "	"	417
			20,025

20,025 feet .....3.79 miles.

Sidings Shortened and Taken Up.

Location	Description.	Purpose.	Length
Greys	Old Temagami Mining & Milling Co., spur taken up	Mining	1,211
Rib Lake	Gillies Bros., log spur; taken out	Lumbering ...	2,103
Haileybury	Freight shed spur, shortened	General	265
New Liskeard ..	McChesney's spur, taken out	Lumbering ...	306
Earlton Jct.	Old town spur, shortened	General	694
M. P. 153½	Temporary bridge spur, taken out	Bridge Cons'n.	300
M. P. 175	Sesikinika Lumber Co., spur, taken out	Lumbering ..	255
Cochrane	Temporary coal dump spur, taken out	Coal Storage..	450
	Connection to T. C. Rly. at east end of yard, shortened	General	280
Porcupine	Town siding, taken out	"	950
Timmins	Coal chute, siding, removed	Coaling	400
			7,214

7,214 feet .....1.37 miles.

Tractor Plow for Farm of Mr. D. Stewart, near Earlton Junction, T. & N. O. Rly., 1915.

Hay Stack on Farm of Frank Hunter, Evanturel Township. Nearest Post-office. Englehart.

Right-of-Way Cleared

Between M.P. & M.P.			Miles.	Description and Remarks.
70	79		9	Both sides thoroughly cleared by one extra gang, piled up and partly burned.
17	24	Elk Lake Branch	7	Both sides thoroughly cleared by one extra gang, piled up and burned by section gangs.
191	194		3	Both sides thoroughly cleared by one extra gang; stuff piled up to be burned by section gangs.
			19	

In addition to the above, all brush and weeds were removed from right-of-way during the summer.

"By thoroughly cleared" is meant right-of-way cleared of all stumps and other wooden rubbish and the same piled up for burning.

Station Grounds Cleared

Location.	Acres.	Remarks.
North Bay Jct.	3	Necessary clearing done for installation boarding car and cinder storage sidings.
Temagami	10	Partly cleared previously.
New Liskeard	3½	Land in rear of old coal dock cleared
McCool	4	Necessary clearing done for piling ground.
Porquis Jct.	8	Station and section dwelling grounds cleared of stumps, etc., and same piled and burned.
Iroquois Falls	2	Stumps, etc., cleared, piled and burned.
Nahma	2	Virgin forest chopped, grubbed, piled and burned. Merchantable timber cut into pulpwood and sold. Waste timber cut into stovewood for company use.
	32½	

Roadway Improvements, etc.

Location.	Purpose.	Description and Remarks.
North Bay	Town streets	Eight cars cinders supplied town for streets south of C. P. R. tracks.
"	Freight delivery, etc.	One car cinders spread over freight shed roadway.
Cobalt	Freight delivery, etc.	Two cars cinders used to repair freight shed roadway.
M. P. 104	Freight delivery	Three cars cinders used here to coat roadway at dynamite delivery spur.
Haileybury	Station and shed roadways	Four cars cinders used for repairs.
"	Freight handling	Two cars cinders used to raise roadway alongside loading siding for especial accommodation of A. P. & P. Co., in loading stone for shipment to Iroquois Falls.
Uno Park	Freight handling	30 cars gravel filling hauled from Elk Pit and placed for roadway at town siding.

Roadway Improvements, etc.—Continued.

Location	Purpose	Description and Remarks
Thornloe	Village streets	7 cars gravel from Elk Pit supplied village for streets.
Earlton Jct.	Station roads	Put roadways to new station buildings in shape with filling from Elk Pit.
McCool	Siding roadway	200 cars filling hauled from Elk Pit and placed for station grounds and roadways.
Osseo	"	219 cars filling hauled from Elk Pit and placed for roadway at siding.
Mountain Chutes	"	58 cars gravel hauled from Elk Pit and placed for roadway to siding.
Leeville	"	30 cars gravel hauled from Elk Pit and roadway built at extension of siding here.
Wabun	"	87 cars gravel hauled from Elk Pit and placed at station for roadway to siding.
Elk Lake	Station roads	Roads here improved with cinders from engine shed at this point.
M. P. 133	Siding roadway	4 cars gravel from Elk Pit placed on roadway at this siding.
Heaslip	Station roads	Roads here improved with 6 cars gravel hauled from Elk Pit.
Englehart	"	Station roadways improved with 4 cars cinders
Chamberlain	Siding roadway	175 cars gravel from Elk Pit and 3 cars cinders used to make piling ground and roadways to same for handling of forest products and freight in general.
Wabewawa	Siding road	3 cars cinders used to make roadway to spur extension at this point.
Bourkes	Station road	Roadway to station here graded with 180 cars sand and gravel hauled from Dane Pit.
Monteith	"	Roadway and crossing at station graded with 27 cars filling hauled from Nellie Lake.
Porquis Jct.	"	Roadways to station and freight shed graded with 40 cars filling hauled from Nellie Lake.
M. P. 233	Siding road	Roadway to new siding here graded with 87 cars sand and gravel from Nellie Lake.
M. P. 245½	"	Roadway to spur at this point graded with 61 cars filling hauled from Nellie Lake.
Nahma	"	Roadway to siding here graded with 104 cars filling hauled from Nellie Lake.
Iroquois Falls	Station roads	Considerable improvement was effected on station roadways here, the following quantities of material used: 55 cars sand and gravel from Nellie Lake Pit, 11 cars boulders from Barber's Bay, and 4 cars cinders.
Cochrane	"	Roadways improved with 18 cars cinders.
Cochrane	Town streets	Town authorities supplied with 6 cars gravel from Watahbeag Pit for town streets.
Schumacher	Station road	Crossing and roadway to station graded with 19 cars gravel hauled from Nellie Lake.
Timmins	"	Roadway at "Y" improved with one car cinders.

Public Road Crossings.

Location.	Description.	Remarks.
M. P. 117½	At grade	New public crossing.
Bourkes	"	New concession line crossing.
M. P. 214½	"	" " " "
Cochrane	"	Crossing installed at 5th Street.
Schumacher	"	Old crossing diverted.
Timmins	"	Temporary crossing closed; new one installed township line.

Private Road Crossings.

M. P. 6½, Elk Lake Bch.	At grade	Private crossing installed for Mr. Cuthbertson.
M. P. 6¾, E. L. B.	"	" " "
M. P. 149½	"	" " "
M. P. 23, Porcupine Sub-Division	"	" " " for Mr. Saltzer.

Ditching—Hand Work.

Location.	Length	Remarks, Etc.
North Bay Jct.	300 feet	New ditch opened; drainage new boarding car and cinder storage sidings.
M. P. 2¾	300 feet	New ditch opened; outlet drainage from Mr. Hutson's property.
M. P. 8 to 9	4,380 feet	Cleaned.
M. P. 9½	253 feet	New ditch opened in connection with tile underdrainage.
M. P. 112 to 116	6,800 feet	Cleaned and deepened, average 12 inches.
M. P. 113 to 114	1,900 feet	New ditch opened.
M. P. 5 to 6, Elk Lake Branch	5,780 feet	Cleaned.
McCool	2,520 feet	New ditch opened around station grounds, average depth, 18 inches.
Osseo	4 00 feet	New ditch; yard drainage.
Englehart	1,627 feet	New ditch opened; yard drainage.
"	3,300 feet	Cleaned; yard drainage.
M. P. 1, Charlton Bch.	560 feet	New catch-water ditch.
" "	330 feet	Cleaned.
M. P. 140 to 142	3,462 feet	Cleaned and deepened.
M. P. 142 to 143	865 feet	New ditch opened.
Wabewawa	970 feet	Cleaned and straightened.
Sesikinika	90 feet	New ditch; drainage tool house.
M. P. 214½	1,095 feet	Cleaned and straightened, in connection with new public crossing installed there.
M. P. 218	150 feet	Outlet for tile underdrainage installed in cut there.
M. P. 219¾	570 feet	Outlet tile underdrainage.
Porquis Jct.	200 feet	New ditch; drainage waste water from stand pipe.
"	2,916 feet	Cleaned; yard drainage.
Nellie Lake	300 feet	Ditch opened through sand bank to increase flow of water to pumping station.
Iroquois Falls	1,570 feet	Outlet underdrainage installed, and drainage of yard.
"	780 feet	
M. P. 33 to 34, Porcupine Sub-Div.	428 feet	Cleaned.
	41,846 feet	
		41,846 feet ..... 7.92 miles.

Clay Cuts Cleaned and Ditched—Machine Work.

Location.	Miles road.	Remarks, Etc.
M. P. 110¾ to 111¾	1	Necessary cleaning done; 55 cars lifted.
Elk Lake Branch:		
M. P. 11½ to 15½	4	133 cars material loaded, including 33 of earth for station lawn, Earlton.
M. P. 18¾	0.25	30 cars material lifted.
M. P. 26	0.25	20 " " "
Charlton Branch:		
M. P. 1 to 1¼	0.25	80 " " "
M. P. 151 to 155	4	66 cars loaded.
M. P. 163½ to 165½	3	35 " "
M. P. 197	0.25	24 " "
M. P. 200¼ to 201¼	1	44 " "
M. P. 203 to 204.....	1	96 " "
M. P. 208¼	0.25	15 " "
M. P. 209½	0.25	30 " "
M. P. 215 to 223½	8.50	983 cars loaded. Heavy cleaning done along this section of road.
Porcupine Sub-Division		
Iroquois Falls	0.50	160 cars loaded, including 44 cars muck which were used to dress slopes at Nushka.
M. P. 7	0.25	12 cars loaded.
M. P. 14 to 40	26	242 " " Cuts cleaned where necessary.
	49.75	

All above work performed by "American" Railroad Ditching Machine, with one work train and necessary crew.

Land Slides and Wash-outs.

Location.	Description and Remarks.
Cobalt	Embankment at north end of Cobalt yard slid into Cobalt Lake during first week of May, caused by removal of water from lake. Damage repaired with 127 cars filling material hauled from Doherty.
M. P. 111	Slight sliding occurred in clay cut here during November. 30 cars clay lifted. No damage done.
New Liskeard	Considerable of the embankment on New Liskeard wharf spur was washed away by the high water in Lake Temiskaming due to construction of dam at south end of lake. Necessary filling was done and heavy rip-rapping placed to prevent further washing, the following material being used for this purpose: 17 cars coarse ballast from Doherty. 17 " " " " pit M.P. 58½. 87 " " " " Elk Pit. 72 cars boulders, picked up on right-of-way between Elk Pit and Earlton. 91 cars stone, picked up on right-of-way along main line.
M. P. 132	Slight wash-out occurred at beam culvert here, caused by spring freshets. Damage repaired with 3 cars cinders from Englehart.
M. P. 219¾.....	Heavy rains during month of June caused rather heavy slide in clay cut here. Material lifted by ditching machine outfit.

Fence Repaired and Renewed.

Description.	Location and Remarks.	Side.	Total Rods.
Station grounds	North Bay Jct. Moved to new line	North	59
Right of way	Between M. P. 7 and 9, rebuilt	East	610
" "	" " 7 and 9, repaired	West	640
" "	" " 10 and 12, rebuilt	East	640
" "	" " 10 and 12¼, repaired	West	720
" "	" " 14 and 15, repaired	Both	640
Station grounds	Haileybury, rebuilt fence, burnt by fire at Dunbar's warehouse	East	63
Right of way	Between M. P. 109 and 111, rebuilt	East	650
" "	" " 109 and 111, repaired	West	640
" "	" " 137 and 137⅞, rebuilt	West	205
" "	" " 137 and 138, repaired	East	320
" "	" " 194 and 195, repaired		320
			5,507

5,507 rods ..... 17.21 miles.

New Fence Constructed.

Station grounds	North Bay Jct., east end of yard	North	131
Right of way	M. P. 15½	West	45
Station grounds	New Liskeard, additional lands	Both	50
" "	Heaslip, additional lands	West	56
Right of way	Charlton	South	62
" "	Charlton, at agent's dwelling	South	100
" "	M. P. 184¾ to 185	East	309
" "	M. P. 184¼ to 185	West	298
" "	M. P. 190 to 194	East	1,289
" "	M. P. 190 to 194	West	1,175
			3,515

3,515 rods ..... 10.98 miles.

Timber Bridges, etc, Filled.

Location.	Material.	Quantities.	Remarks.
M.P. 1.44	Sand from cuts 1½, 8, 11	49 cars	Beam culvert replaced by concrete pipe and filled.
M.P. 4.81	Sand from cuts 1½, 8, 11	85 "	Beam culvert replaced by concrete pipe and filled.
M.P. 25.71	Filling from pit M.P. 25	905 "	Timber trestle replaced by concrete culvert and filled.
M.P. 48.90	Filling from pit M.P. 25	16 "	Trestle approaches to steel bridge.
M.P. 71.37	Filling from pit M.P. 58½ Filling from Doherty Scrap tin and rubbish from North Bay	493 " 1,961 " 2 "	Timber trestle replaced by concrete culvert and filled. Quantities shown here cover material used to raise embankments at this point. Heavy sliding occurred during course of filling.
M.P. 78.60 M.P. 78.78 M.P. 79.66 M.P. 80.45	Filling from pit M.P. 58½ Filling from Doherty	17 " 91 "	Beam culverts replaced by concrete pipe culverts and filled.
M.P. 27 Elk Lake Branch	Filling from Elk Pit Clay from cut M.P. 26.	15 " 20 "	Filling sag in trestle filled last year.
M.P. 137.15	Filling from Dane Pit.	36 "	Beam culvert replaced by concrete pipe culvert and filled.
M.P. 163.3	Filling from Dane Pit.	5,294 "	Timber trestle replaced by concrete culvert and filled.
M.P. 196.80	Filling from Nellie Lake..	73 "	Trestle approaches to steel bridge filled.
M.P. 205.77	Filling from Nellie Lake.. Filling from Watahbeag	345 " 30 "	Completed work of filling timber trestle over arch culvert.
M.P.30.37 Porcupine Sub-Div...	Filling from Nellie Lake..	13 "	Beam culvert replaced by concrete pipe culvert and filled.

Main Line, Re-ballasted.

From M.P.	To M.P.	Quantities and Description.	Cars.	From pit.	Total miles.
38	39	Patch ballasted	51	M.P. 58½	1
45	46	" "	34	" ..	1
56	58.5	Full "			2.5
59.5	62	" "			2.5
62	64	Patch "	749	M.P. 58½	2
121	123	" "	34	"	2
131	132	" "	34	"	1
132	133	" "	45	Elk Pit.....	1
		Elk Lake Branch.			
19	22.5	" "	75	"	3.5
162	163	" "			1
164	169	Full "	826	Dane Pit....	5
172	173	Patch "	72	"	1
181	182	" "	18	"	1
		Total miles			24.5

Miles track full ballasted	10
" patch "	14.5
Total miles track ballasted	24.5

Barley in Shock, belonging to Mr. Schell, South Half Lot 1, Con. 5, Dack Township, 1915.

Oats grown on Farm of D. Stewart, Earlton, Ont., September, 1915.

Main Line Embankments Restored to Width.

Between— M.P.	and M.P.	Cars of material.	Taken from	Miles track.
28	34	129–coarse gravel	Pit M. P. 25	6.0
55.75	77	918– " "	M. P. 58½	21.25
		1,308– " "	Doherty	

Elk Lake Branch.

7.5	18.5	130–clay	Cuts 11½–18¼	11.00
137	138	30–ballast fill'g	Elk Pit	1.00

Charlton Branch.

2	2.25	70–clay	Cuts 1–1¼	0.25
140	.....	10– "	Cuts 1–1¼ C.B.	0.25
150.75	153.5	76– "	Cuts 151–163½	2.75
162	169	786–sand filling	Dane Pit	7.00
		25–clay	Cuts 164¼	
179	180	288–sand filling	Dane	1.00
		75– " "	Nellie Lake	
195.75	196	11–clay	Cuts 197–209½	0.25
199.25	202	29– "	" "	2.75
204.5	206.25	120– " "	" "	1.75
206	207	8–sand filling	Nellie Lake	1.00
212	224.5	14– " "	" "	12.50
		974–clay	Cuts 215–223½	

Porcupine Sub-Division.

1	4.5	96–clay	Cuts I. F. B.	3.50
7.5	40	292– "	Cuts 14–40	32.50
		54–sand filling	Nellie Lake	
246	251	95– " "	" "	5.00
			Total miles	109.75

Rock Cuts Cleaned and Widened.

Nil.

Rip-Rapping—Embankments, Etc.

Location.	General Description.
New Liskeard	Embankment of spur to wharf was rip-rapped with 121 cars coarse gravel, 72 cars boulders and 91 cars large stone, to prevent washing-away by water of Lake Temiskaming. Construction of dam at south end of lake caused water to rise, necessitating the above work for protection of embankment on this spur.

Ballast, Loaded by Steam Shovel Nellie Lake.

Cars.	Purpose.
850	Construction ballasting sidings, Cochrane Terminals.
96	Construction ballasting joint section, Cochrane.
292	Filling T. & N. O. transfer sidings, Iroquois Falls.
288	Ballasting T. & N. O. transfer sidings, Iroquois Falls.
53	" A. P. & P. Co. siding, Iroquois Falls.
29	" Iroquois Falls yard.
345	Filling Russell Creek trestle, M. P. 205¾.
40	" around bridge piers, M. P. 208.
73	" bridge approaches, M. P. 196.80.
75	Covering, cross logging and widening, M. P. 179.
117	Filling for road crossing, Nahma.
50	" " " M. P. 225¼.
25	" " " M. P. 214½.
40	Filling roadway at freight shed, Porquis Junction.
64	" " at siding, M. P. 245½.
104	" " at Nahma.
55	" " at station, Iroquois Falls.
27	" " and crossing, Monteith.
19	" " and crossing, Schumacher.
85	" " at new siding, M. P. 233.
114	Filling for siding, M. P. 233.
38	Ballasting mechanical coaling plant siding, Porquis Junction.
5	" Holgevac's siding, M. P. 11, Porcupine Sub-Division.
30	" Hollinger Mine siding, Timmins.
13	Filling beam culvert, M. P. 30.37. Porcupine Sub-Division.
10	Widening embankments, M. P. 212.
8	" " M. P. 206-207.
64	" " Porcupine Sub-Division.
4	" " M. P. 215½.
95	" " M. P. 246-251.
5	Ballasting Rowlandson's spur, M. P. 5¼, Porcupine Sub-Division.
6	Ballasting Crawford & Levinson's siding, M. P. 23, Porcupine Sub-Division.
4	Extension station platform, Chamberlain.
4	" " " Wabewawa.
3,127	

Cinders Handled—North Bay

Cars.	Where Unloaded.	Purpose.
7	North Bay	Filling for piling ground, east of carpenter shop.
11	" "	Ballasting yard sidings.
4	" "	" and stop-block, material siding.
1	" "	Stop-block, siding No. 10 and 11.
2	" "	Filling for pile bottoms, carpenter shop.
3	" "	" floor in new carpenter shop.
1	" "	Extension sidings, new carpenter shop.
1	" "	Supplied town for McIntyre Street sidewalk.
8	" "	" " for Golf Street improvements, south of C. P. R. tracks.
10	" "	Ballasting, new storage sidings, material siding.
3	" "	Covering drain west of ice house for burning ground for car department.
1	" "	Roadway rear of Regina Street freight shed.
18	" "	Supplied B. & B. Dept. for culverts.
4	" "	Stocked on dump.
170	" "	Supplied Grand Trunk Railway for points south (mostly flat cars).
5	M. P. 9½	Drainage road-bed.
1	M. P. 10¾	Filling culvert.
1	Riddle	Filling at derail stand.
41	M. P. 45¼	Filling at sink hole.
3	M. P. 104	Roadway to dynamite siding.
2	Haileybury	Loading platform for A. P. & P. Co.
1	"	Repairs station roadways.
2	Cochrane	" " "
300		

Cinders Handled—Latchford

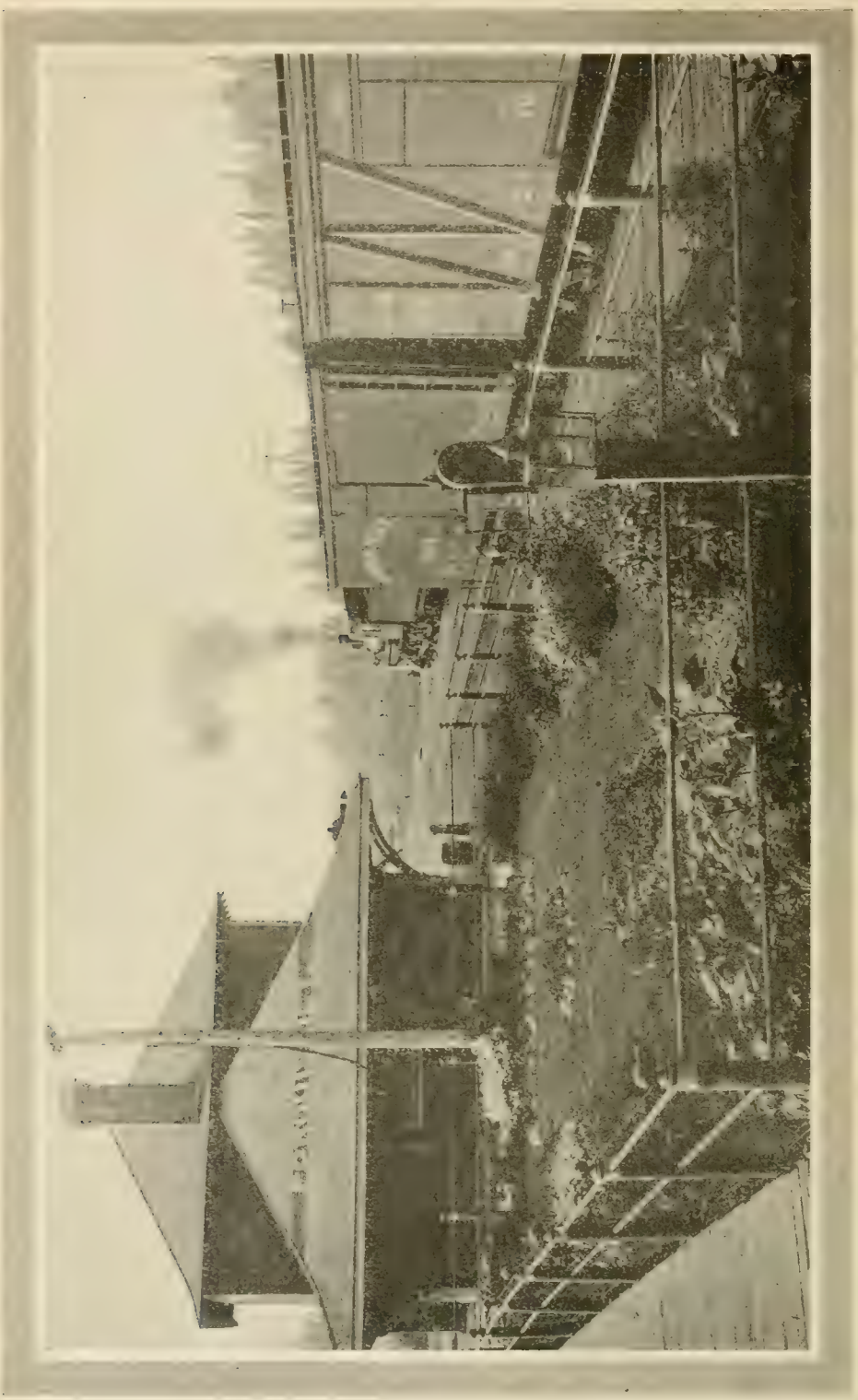
2	Cobalt	Repairs roadway in rear of freight shed.
3	"	Ballasting Queen City Oil Co.'s. siding.
3	Haileybury	Repairs shed roadway.
8		

Cinders Handled—Elk Lake

1	Elk Lake	Filling at car house.
2	"	Ballasting yard sidings.
2	M. P. 27	Ballast.
5		

Cinders Handled—Englehart

Cars.	Where Unloaded.	Purpose.
1	Englehart	Repairs station sidewalks.
4	"	Station grounds.
7	"	Ballasting yard sidings.
5	"	Filling repair track.
1	"	Banking pump house.
2	"	Filling at bunk room
3	"	" tool house.
1	"	" shop grounds.
2	"	" at turn-table.
1	Charlton	" washout.
3	"	" around agent's house.
3	Dack	" station grounds.
1	Heaslip	Banking new station.
3	M. P. 137	Shim houses.
2	"	Ballast.
3	M. P. 132	Washout.
6	M. P. 132½	Tile drainage.
1	New Liskeard	Supplied tennis club.
2	"	Supplied Town of New Liskeard.
1	M. P. 110	Ballast, Nipissing Central Railway.
2	M. P. 104	Cinder platform, N. C. Railway.
3	Chamberlain	Roadway at piling ground.
6	"	Ballast and drainage.
3	Wabewawa	Station roadway improvements.
2	Krugerdorf	Improvements section dwelling grounds.
13	M. P. 219¾	Ballast.
13	Monteith	Station platform.
1	Keys	" "
32	Monteith	Tile drainage in that vicinity.
3	Iroquois Falls	Station roadway.
3	" "	Tile drainage.
3	Matheson	Ballast.
136		



T. & N. O. Railway Station at Porquis Junction.

ANNUAL REPORT, BRIDGE AND BUILDING DEPARTMENT

Year Ending October 31st, 1915.

W. J. OLDHAM, BRIDGE AND BUILDING MASTER.

In submitting my Annual Report for year 1915, beg to advise that all work pertaining to my department was performed by our own forces.

Buildings.

North Bay.

General Offices.—A new hardwood, birch floor was laid in the office of Traffic Accountant, and new cupboards and shelves installed. A doorway cut out between the offices of the Superintendent of Traffic. In the Despatchers' office an additional storm sash was made and put on. The exterior of the building was painted two coats, including posts and railing around garden. In the interior of the building, the walls in the office of Chief Engineer were washed and kalsomined, the bookshelves shellaced and varnished, all woodwork cleaned and floor oiled. The shelves in the office of the Paymaster, Roadmaster and B & B Master were stained, shellaced and varnished. The plaster and tile floors in lower corridors were repaired. Owing to the change of offices, which took place on June 1st, it was found necessary to rewrite lettering on glass of doors on lower floor.

Freight Shed.—General repairs were made to windows and doors and new shelves were put in office of freight shed. A new platform was made for loading and unloading automobiles.

North Bay Junction.

Roundhouse.—All asbestos smoke-jacks were lowered to six feet. Three 28 in. dia. 1/8 in. steel smoke-stacks 64 ft. 3 in. long with guy wires and fastenings complete were erected over the three boilers in boiler room. The boilers were completely overhauled, new firebrick being used where necessary.

Coal Chutes.—The approach trestle was surfaced and lined, posts spliced, and three bents renewed. General repairs were made to arms, aprons, etc.

Stores Building.—New pigeon holes were erected the full length of the stationery room. The interior of the offices of the general staff was cleaned, kalsomined and painted. One hundred feet of the corrugated iron building formerly used by the different departments as a store room was moved from old site to just east of general stores building. The stores department having taken over the stock carried by the Road Department and B. & B. Department required additional storage room and this portion of the building was moved to new site for that purpose. A new platform 12 ft. by 100 ft. was built on west side of the building.

Coach Shop.—Additions were made as follows: Coach shop (frame) was extended 27 ft. 6 in. with 16 sky lights. Lean-to for upholstering and cleaning room (frame) 15 ft. by 82 ft. Paint shop (brick) with concrete floor 23 ft. by 30 ft. Carpenter shop extended 45 ft., separated from coach shop by brick wall and fireproof doors. Old boiler house was removed, and a new one 16 ft. by 40 ft. erected on a concrete foundation, south of carpenter shop.

General Offices.—Master Mechanic's office was completely overhauled, cleaned, and painted. The B. & B. office was partitioned off in order to make accommodation for Telegraph and Telephone department.

Yard Office.—New pigeon holes were made and installed, and repairs made to telephone cupboards in kit room, also platform repaired.

Stock Yard.—Repairs were made to water service, gates, fence and troughs.

Turntable.—A new nest and set of balls were installed in centre of table.

Track Scales.—Scales were inspected regularly, and repairs made when necessary.

Ice House.—New 2 in. plank floors 28 ft. by 32 ft. were laid in two of the chambers, and water pipe for fire protection installed.

Car Repairers' Building.—After the fire on August 2nd, which burnt most of the inside fixtures, our forces put in more up-to-date ones.

Repair Track.—An addition 6 ft. by 14 ft. was put to the blacksmiths' shop, and a new scrap bin 12 ft. by 22 ft. built.

Sandhouse.—Old sandhouse at south end of yard removed, and new one 18 ft. by 22 ft. built just east of standpipe.

Trout Mills.—General repairs were made to station and platform.

Widdifield.—Light repairs were made to station platform.

Tomiko.—A new cash till was installed and light repairs made to roof.

Redwater.—The old plank walk was taken up and a cinder walk laid.

Temagami.—A new plank walk was laid from station to the town sidewalk.

Latchford.—General repairs were made to platform. A doorway was cut between Agent's office and waiting room. The buildings formerly owned by the Empire Lumber Company, as follows, were taken down and material shipped to North Bay Junction, which was mostly used in making alterations to coach shop, North Bay Junction.

(*a*) Engine shed.
(*b*) Waggon shed.
(*c*) Stable.
(*d*) Dry kiln.

Gillies Depot.—Old platform was taken up and new one put down.

Cobalt.—Repairs were made to station doors and freight shed roof.

North Cobalt.—A new oil house 7 ft. by 8 ft. was built by our forces at North Bay Junction and shipped to this point.

Haileybury.—Freight shed raised one foot, and a new platform 8 ft. by 130 ft. built. Tracks were changed to suit platform.

New Liskeard.—Repairs were made to station and freight shed roofs and train order board. An oil house was built for storing oil and lamps (7 ft. by 8 ft.).

Uno Park.—Light repairs were made to doors and windows. The well was lined with concrete, and a drain was put in from the well across the track to the ditch.

Thornloe.—Repairs were made to freight shed roof.

Earlton.—New fence built around station grounds.

Englehart.

Station.—Alterations were made to restaurant to increase lunch counter accommodation, by taking away stairs and moving partitions back, and putting an addition of 10 ft. to the counter. Two bedrooms of 8 ft. by 16 ft. were finished in the attic to be used by the manager of the restaurant. The walls and

ceilings of bedrooms, bathroom, corridor, and staircase were cleaned, sized, and repapered. Floor of restaurant was cleaned, oiled, and varnished. The walls and ceiling of kitchen were cleaned, sized and woodwork painted, two coats. A new sink and shelves were installed in kitchen.

Freight Shed.—Roof was covered with a coat of tar, and gravel.

Roundhouse.—A new roof of 1 in. lumber, laid on 2 in. by 4 in. scantling, with tar and gravel over all is now being put on. The boilers in machine shop were overhauled, new firebrick being used throughout. Two 28 in. dia. 1/8 in. steel smokestacks 64 ft. 3 in. long, with guy wires and fastenings, complete, were erected over two of the boilers. A new creosoted pine floor, with new cedar stringers, was laid in the machine shop and roundhouse. Repairs were made to ash-pit, cinder hoist, and turntable. A new roof was put on coal shed, and casting store room.

Coal Chutes.—Approach trestle was surfaced and lined, and repairs made to chutes.

Greenhouse.—Repairs were made to platform, porch, and drain, and new roof put over verandah.

Ice House.—Repairs were made to platform and doors.

Chamberlain.—Light repairs were made to station and platform.

Krugerdorf.—General repairs were made to station and platform.

Swastika.—General repairs were made to doors and locks. An oil platform was built at north end of freight shed.

Sesekinika.—Repairs were made to chimney and platform.

Bourkes.—Train order board was repaired.

Matheson.—Repairs were made to stock chutes.

Nushka.—Box car was fitted up with a platform in front to be used as a temporary station.

Porquis Junction.—An oil house 7 ft. by 8 ft. was built, and two new station seats made at carpenter shop, North Bay Junction, and installed in station. Our forces at present are engaged in installing a new coaling plant.

Cochrane.

Station.—General repairs were made to locks, and doors. A platform 12 ft. by 504 ft. was built between the tracks for the purpose of better accommodation for the public. A new telephone cabinet was built at North Bay Junction, and installed in waiting room of station. All wood and iron, outside of station, was painted, two coats. Doors were varnished and relettered. The brick work below the verandah was brushed and washed. All walls and ceilings on inside were washed and kalsomined, and woodwork cleaned and painted.

Round House.—The boilers in machine shop were completely overhauled. The sash were all reputtied and painted. Repairs were made to drop and ash pits.

Coal Chutes.—The ram was surfaced and lined, and general repairs made to chutes.

Turntable.—The new circle containing the bearings was installed and table balanced.

Coal Shed.—Roof was covered with corrugated iron.

Charlton Branch.

Charlton.—New shingle roof put on combined station and freight shed. Well dug and pump installed.

Elk Lake Branch.

Elk Lake.—Our forces fitted up new station with pigeon holes, shelves, cupboards, folder racks, tables, cash tills, signs and train order board. A frame coal shed 11 ft. by 21 ft. was built in connection with station. The roof of freight shed was covered with 16 oz. tar paper.

Porcupine Branch.

South Porcupine. Combined station and freight shed platform was extended 338 ft.; a partition was put up between the baggage room and express room, and shelves installed in express room.

Schumacher.—Freight shed was raised and blocked up. A new coal bin, large enough to hold a car of coal, was built.

Timmins. Lamp posts were put up at intervals along station platform, and train order board repaired. The space in baggage room was increased by moving partition back between baggage room and express office. A new roof was put over coal shed.

A new steel smokestack 52 ft. long was put up on engine shed, also roof repaired. Old coal trestle was taken down and material shipped to North Bay Junction.

Keys.—New portable station 9 ft. by 6 ft. by 30 ft. was built.

Nipissing Central Railway.—A new 6 in. sewer 130 ft. long was laid from car barns. At M.P. 104 a shelter station 8 ft. by 16 ft. was erected to accommodate passengers of street railway.

Tanks.

North Bay Junction.—A new Fairbanks-Morse water spout was erected on stand pipe. The 4 in. water line was extended from ice house south to coach shop, a distance of 860 ft. The yard office, kit room, coach shop, and ice house were connected up from this main. Two new hydrants were put in for fire protection, one at the ice house, and one at the coach shop. The extending of this main did away with the services of the old water tank, which was taken down and the ground surrounding the site cleaned up. The main was changed at stand pipe and drain repaired, so as to give town pressure to main running to coach shop. All water at North Bay Junction is now supplied from town pressure.

Widdifield.—General repairs were made to tank.

Tomiko.—Pumphouse was sheeted on inside, and smokestack erected. The pump was completely overhauled.

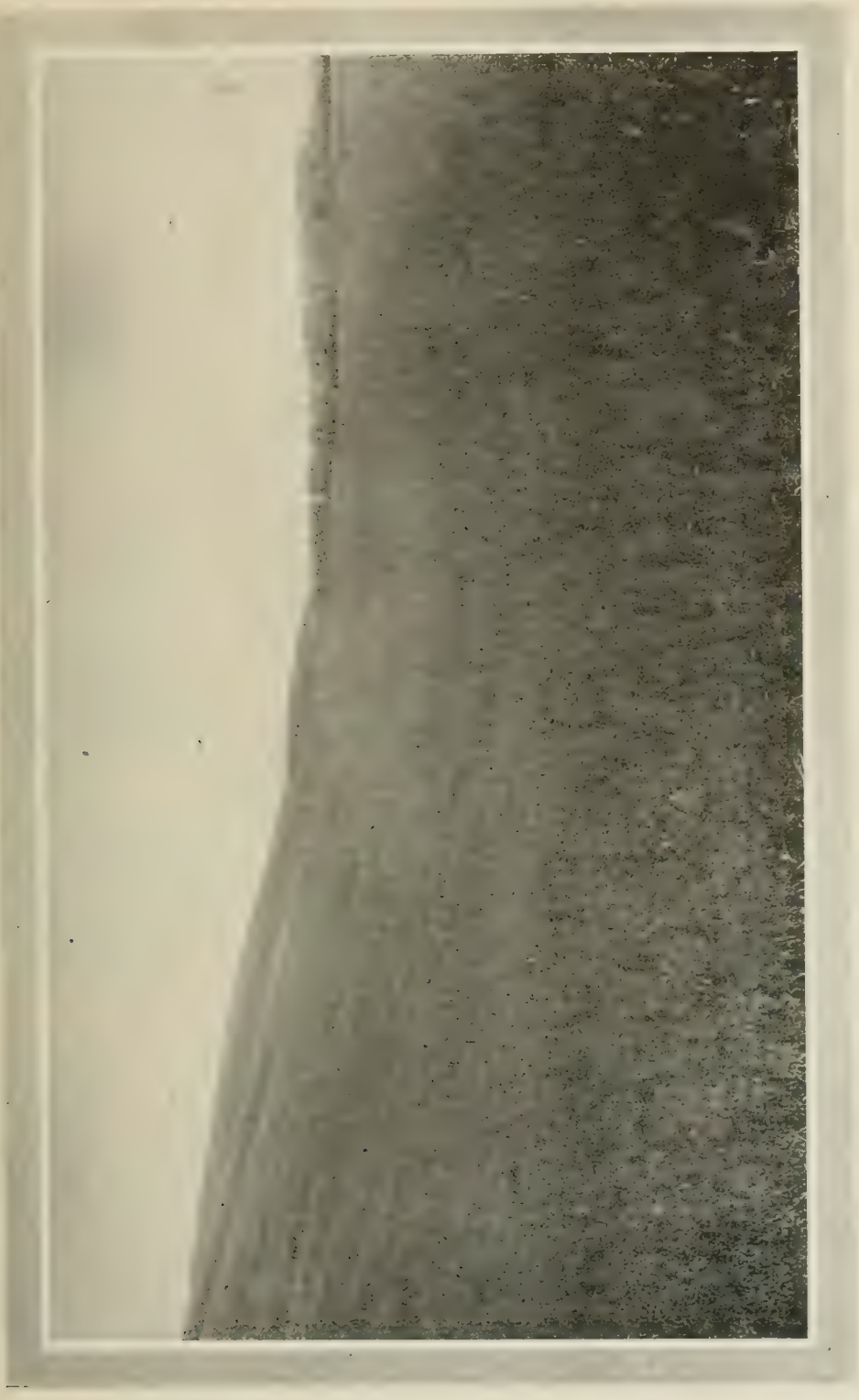
Redwater.—A new spout was put on, and valves and float rod repaired.

Temagami.—Owing to the poor condition of the tub, it was found necessary to renew it, as well as some of the substructure. A new 10 in. outlet valve was installed, and a new floor laid in pumphouse.

Latchford.—General repairs were made. A 3 in. line put in from tank for lawn service. Installed a new pipe in tank so that water would come out of tank, instead of pump discharge pipe.

New Liskeard.—General repairs were made and a new tank spout put on.

Englehart.—Posts and caps in tank were renewed. Pumphouse was sheeted on outside. A concrete chamber with drainage complete for a new 5 h.p. induction motor and centrifugal pump for auxiliary water supply from Blanche River was



Field of Oats, Fitzpatrick's Farm, Dawson's Point, New Liskeard, Ont., 1915.

built in pumphouse, and pump installed. In this connection we erected the pole line from station to pumphouse. Wells No. 1, No. 2, No. 3 were examined from time to time, and were kept running.

Mindoka.—A new concrete foundation was put in under pumphouse engine.

Swastika.—Tank was braced and tub caulked.

Bourkes.—General repairs were made to tank. Pumphouse was extended six feet, double sheeted, and new roof put on.

Matheson.—New tank spout was put on, and general repairs were made.

Porquis Junction.—Our forces are, at present, putting in concrete foundation for a forty thousand gallon steel tank, including all pipe lines.

Nellie Lake.—Sub-structure was braced.

Cochrane.—General repairs were made to tank. A new water and steam line 800 ft. long with reinforced concrete valve chambers, including a 4 in. Keystone direct reading water meter, with all valves and piping complete, was installed at station.

PORCUPINE BRANCH.

Connaught.—A new smokestack was erected on pumphouse.

Timmins.—A new automatic valve was installed in tank.

Dwellings.

Widdifield. Water service from tank to section house was repaired.

Bushnell.—Repairs were made to locks and doors.

Temagami.—New chimney was built in section house, foundation repaired, and a new pine floor laid in kitchen.

Cobalt.—Alterations were made to cellar of section house. A new door with steps leading to it was cut in foundation to allow an entrance to cellar from the outside.

Haileybury.—Heating system of Agent's house was overhauled.

Heaslip.—Picture moulding was put on two rooms of section house. A new pine floor laid in kitchen, and chimney repaired. Kitchen was sheeted on outside and painted.

Englehart.—The verandah of tenement house was repaired. Three new galvanized iron smokestacks were made and put on kitchen chimneys. New hardwood floors were laid in kitchens of tenement house.

Krugerdorf.—Interior of section house was cleaned and painted.

Scotty Springs.—A new chimney was built on section house.

Dane.—General repairs were made to section house.

Sesekinika.—The verandah of section house was repaired.

Bourkes.—General repairs were made to doors and windows of section house.

Nushka.—A new standard section house 20 ft. by 30 ft., kitchen attached, 10 ft. by 13 ft., with woodshed 14 ft. by 20 ft. was built here to replace the one disposed of at Monteith.

Cochrane.—A new platform was built at back of kitchen of section house. A new hot water furnace was installed in locomotive foreman's house.

PORCUPINE BRANCH.

Iroquois Falls.—Section house drain was repaired and a small platform built in front of tool house.

Timmins.—New brick chimneys were built on Bachelors' camp and car repairers' building. Water was put into the house occupied by brakeman Copp by running a 40 ft. ½ in. galvanized iron pipe from main to house.

Porcupine.—A portion of freight shed was set aside for agent's dwelling. It was lathed and plastered and a new 19 ft. double chimney built.

General Work.

Light repairs were made to camps at Redwater, Cassidy and Nellie Lake pits.

In addition to what has already been mentioned our paint gang painted all new buildings, switches, train order boards, semaphores, folder racks, bulletin boards, signs and elevation posts.

In season all screens and screen doors, storm doors and windows, were put in place on different buildings, and repairs made to all heating systems.

During the year our forces fitted up thirty-five boarding cars, and repaired fifty-two hand cars, twenty-four lorries, and eleven speeders, also all tools for Road and B. & B. Departments. For Telegraph and Telephone Department they made cable boxes, battery boxes and telephone booths. They handled 536,176 ft. of different kinds of lumber, 4,560 bags of cement and drove 9,414 ft. of piles. They made 390 lin. ft. of 36 in., 970 lin. ft. of 30 in., 672 lin. ft. of 24 in,, and 447 lin. ft. of 15 in. concrete pipe. Of this amount they laid 142 lin. ft. of 36 in., 672 lin. ft. of 30 in.. 234 lin. ft. of 24 in. and 75 lin. ft. of 15 in. concrete pipe.

Bridges and Trestles.

Trestle.....M.P. 25.71.....Decks were repaired and bents plumbed, and bridge filled.

Trestle.....M.P. 57.31.....Deck was raised, ballast walls built and guard rails put on.

Trestle.....M.P. 75.44.....Trestle was surfaced and lined and guard rails put on.

Bridge.....M.P. 138.00.....The end of steel span was raised, track lined, and the steel scraped, cleaned and painted.

Bridge.....M.P. 146.02.....Bolts were tightened, and end of span raised. The steel was scraped, cleaned and painted. Considerable stone was used to fill in around abutments.

Bridge.....M.P. 153.00.....900 ft. of new guard rails were put on.

Trestle.....M.P. 162.03.....Trestle was surfaced and lined, bolts tightened, three new bents put in, ballast walls built, and decks repaired.

Trestle.....M.P. 163.15.....On March 16th, 1915, 11 bents were burned. Our forces rebuilt the burnt portion and had trains running over within forty-eight hours after the fire. In July, one of the streams was diverted, and trestle filled. 158 lin. ft. of 30 in. concrete pipe was used in diverting stream.

Trestle.....M.P. 164.03.....Bolts were tightened and iron span raised. Decks were repaired and approaches lifted.

Trestle.....M.P. 161.45.....Bolts were tightened and iron span raised.
Trestle.....M.P. 168.38.....Two new bents were built, new ties were put in deck and bolts tightened.
Trestle.....M.P. 169.14.....Girth and braces were renewed.
Trestle.....M.P. 175.00.....Bolts were tightened, two new bents put in, caps and stringers renewed, and trestle surfaced and lined.
Trestle.....M.P. 178.90.....Three new bents were put in, ballast walls built and trestle surfaced and lined.
Trestle.....M.P. 181.05.....Four new bents were put in, ballast walls built and trestle surfaced and lined.
Bridge.....M.P. 206.00.....Bridge was surfaced and lined.
Bridge.....M.P. 208.00.....Deck was repaired, surfaced and lined and steel scraped, cleaned and painted.

KERR LAKE BRANCH.

Trestle.....M.P. 4.25.....Trestle was surfaced and lined, mud sills renewed and deck repaired.

ELK LAKE BRANCH.

All trestles were surfaced and lined.

CHARLTON BRANCH.

Trestle.....M.P. 1.25.....Trestles was surfaced and lined, new posts put in and deck repaired.
Trestle.....M.P. 6.25.....Approaches were lifted, new sills put in, and trestle surfaced and lined.
Trestle.....Long Lake.....New ties and mud sills were put in and trestle surfaced and lined.

PORCUPINE BRANCH.

All trestles surfaced and lined.

Culverts.

The following beam culverts with concrete decks were replaced by permanent concrete pipe culverts and filled:

Culvert.....M.P. 1.44..... A double line of 30 in. concrete pipe, 120 lin. ft. was put in and culvert filled.
Culvert.....M.P. 4.83..... A double line of 36 in. concrete pipe, 144 lin. ft. was put in and culvert filled.
Culvert.....M.P. 10.71.....A single line of 30 in. concrete pipe, 102 lin. ft. was put in and culvert filled.
Culvert.....M.P. 11.18..... A double line of 30 in. concrete pipe, 151 lin. ft. was put in and culvert filled.
Culvert.....M.P. 25.71..... A double line of 30 in. concrete pipe, 180 lin. ft. was put in.

Culvert.....M.P. 71.37.....A double line of 30 in. concrete pipe, 180 lin. ft. was put in and culvert filled.
Culvert.....M.P. 78.60..... A double line of 30 in. concrete pipe, 118 lin. ft. was put in and culvert filled.
Culvert.....M.P. 78.78..... A double line of 30 in. concrete pipe, 144 lin. ft. was put in and culvert filled.
Culvert.....M.P. 79.66..... A double line of 24 in. concrete pipe, 51 lin. ft. and 30 in.—51 lin. ft. was put in and culvert filled.
Culvert.....M.P. 80.45..... A double line of 30 in, concrete pipe, 105 lin. ft. was put in and culvert filled.
Culvert.....M.P.137.15..... A double line of 30 in. concrete pipe, 108 lin. ft. was put in and culvert filled.
Culvert.....M.P.176.50.....A single line of 30 in. concrete pipe, 33 lin. ft. was put in and culvert filled.

PORCUPINE BRANCH.

Culvert.....M.P. 30.37..... A double line of 30 in. concrete pipe, 111 lin. ft. was put in and culvert filled.

Englehart Yard.—A new beam culvert on a pile foundation was built in the north end of Englehart yard.

Main Line.—General repairs were made to the following culverts: M.P. 139.7, 139.8, 148.50, 169.47, 174, 189.

ANNUAL REPORT TELEGRAPH AND TELEPHONE DEPARTMENT

W. J. KELLY, S. OF T. & T.

Pleased to report that telegraph and telephone business held up exceedingly well under existing conditions, during the past year, as following statement indicates:

Commercial Telegraph business handled:

Local messages sent	28,241
Local messages received	27,725
Conjoint messages sent	36,360
Conjoint messages received	24,942
Total	117,268
Cable messages sent	661
Cable messages received	235
Total	896
Cables, words sent	12,799
Cables, words received	3,360
Total	16,159

Our cable business was affected considerably owing to censorship of cablegrams to and from foreign countries.

Owing to increase in railway and commercial telegraph business an exclusive commercial telegraph office was opened at Cochrane on October 18th. On this date we also commenced handling Grand Trunk Pacific commercial telegraph business, under agreement entered into with that company.

On August 31st, agreement entered into with the Canadian Pacific Railway Company, dated August 31st, 1905, for handling commercial telegraph business at North Bay, expired, and new agreement for period of one year, was entered into, for handling of local and conjoint business.

Commercial Telephone Business Handled:

Out calls, day	31,088
Out calls, night	6,642
Total	37,730
In calls, day	27,899
In calls, night	5,822
Total	33,721

During the year twenty-four subscribers' telephones were installed, and twenty-three removed, which was mainly due to short term leases.

For benefit of settlers, commercial telephone line, metallic circuit, was extended from Sesekinika to Bourkes and toll office opened at latter point.

From Swastika a metallic circuit was strung to Boston Creek, and toll office opened for benefit of mining camps in this vicinity.

We have experienced no serious interruptions to either commercial telegraph or telephone lines during the past year.

General repairs have been made over entire system to railway and commercial lines and put in first class condition.

Following is summary of telegraph and telephone wire in operation:

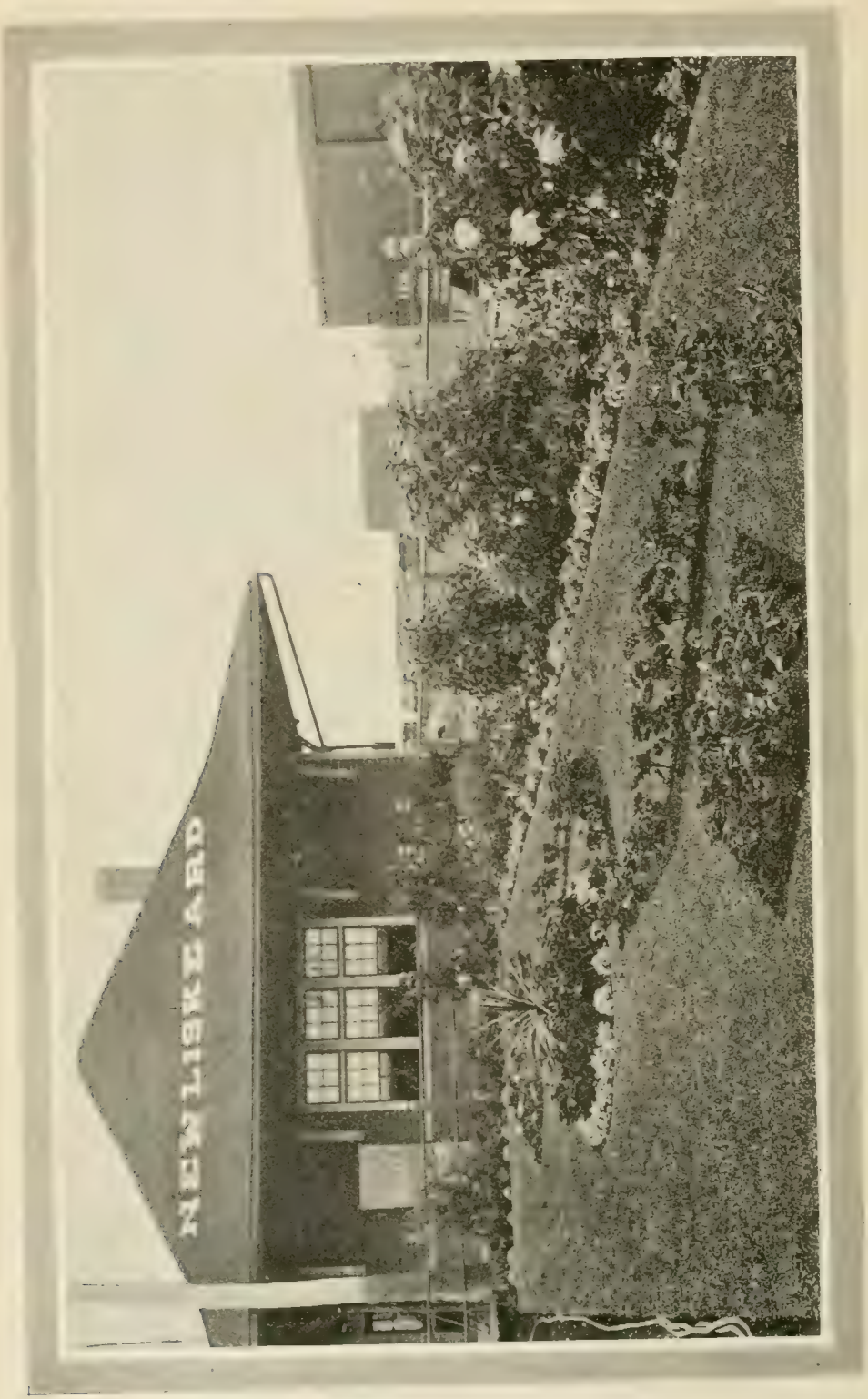
Wire.	Gauge.	Weight.	Service.	Miles.
Iron	No. 8 B. W.	378	Telegraph	1,407
Iron	No. 8 B. W.	414	Party Telephone	50
Iron	No. 12 B. W.	165	Long Distance Telephone	71
Iron	No. 12 B. W.	165	Local Exchange	85
Copper	No. 9 B. & S.	210	Telephone Train Despatching	574
Copper	No. 10 N. B. S.	263	Long Distance Com.	658
Copper	No. 12 B. & S.	105	Local Party Line	231
Style B.	No. 16 Twisted	pair	Local Exchange	38,000 Feet

Total mileage—Wire, 3,112 (1915).
" " —Poles, 343

All of which is respectfully submitted.

W. J. KELLY,

Supt. of Telegraph and Telephone.



New Liskeard Station, T. & N. O. Railway, 1915.

ANNUAL REPORT OF SUPERINTENDENT OF TRAFFIC

Year Ending October 31st, 1915.

W. A. GRIFFIN, S. of T.

During the past year, thankful to report that we have been exceptionally free from any serious derailments or accidents.

The handling of trains by telephone, referred to in Annual Report 1913, folio 81, continues to give entire satisfaction.

Effective July 13th, 1915, the Trancontinental line between Toronto, Ont., and Winnipeg, Man., was opened for through traffic. This route consists of Grand Trunk Railway, Toronto to North Bay—Temiskaming & Northern Ontario Railway, North Bay to Cochrane—and Canadian Government railways (Transcontinental Railway), Cochrane to Winnipeg, and effective same date, trains No. 9 and 10, "The National," commenced a tri-weekly service, leaving Toronto, Ont., Tuesdays, Thursdays and Saturdays, and leaving Winnipeg, Man., Sundays, Tuesdays and Thursdays. Equipment of "The National" consists of colonist sleeping cars, electric lighted first-class coaches, tourist sleeping cars, dining cars, and standard sleeping cars, operating through without change, Toronto, Ont., to Winnipeg, Man.

Necessary time-table changes have been made to meet winter and summer traffic requirements. Time-table No. 30 made effective November 29th, 1914, and time-table No. 31, effective July 11th, 1915. Current time-table shows Trains No. 1 and 2 daily, except Sunday, between North Bay and Cochrane. These trains are equipped with standard C. P. R. sleeper and inter-line service, via C. P. Railway, to Montreal. Trains No. 46 and 47, daily, except Sunday, between North Bay and Cochrane, with interline service, via G. T. Railway to Toronto. These trains are equipped with Pullman cars between North Bay and Cochrane, and parlor-cafe cars between North Bay and Englehart. Trains No. 9 and 10, "The National," tri-weekly between North Bay and Cochrane, with inter-line service, via G. T. Railway to Toronto, and T. C. Railway to Winnipeg. Trains No. 50, 51, 52, 53, 54 and 55, daily, except Sunday, between Timmins and Porquis Junction, connecting with main line trains. Trains 30, 31, 32 and 33, daily, except Sunday, between Iroquois Falls and Porquis Junction, connecting with main line trains. Trains No. 60 and 61, daily, except Sunday, between Elk Lake and Earlton Junction, making connections with Trains No. 47 and 2 at Earlton Junction. Trains No. 62 and 63, Wednesdays only, between Elk Lake and Earlton Junction, connecting with trains No. 1 and 46. Train No. 4, daily, except Saturday and Sunday, Englehart to Cobalt. Train No. 6, Saturday only, Englehart to Cobalt. Trains No. 23, 24, 25 and 26, daily, except Sunday, between Englehart and Charlton, connecting with main line trains.

Following derailments and accidents occurred:

1914.

December 2nd, Engines 105 and 120 collided Englehart yard. Damage, engine 105, $310; engine 120, $30. Employees responsible disciplined.

December 24th, Engines 151 and 129 collided North Bay Junction yard. Damage, engine 151, $50; engine 129, $150. Responsible employees disciplined.

ALLEGED ACCIDENTS.

1915.

January 4th, Brakeman R. E. Fischer, train No. 81, while jumping off train, shed platform. Earlton Junction, alleged sprained ankle, account lighting on piece of timber. Resumed duty Jan. 11th.

January 14th, Train No. 4, derailed M.P. 116½, derailing cars B. & S. 12381, ore; P. McK. & Y. 15698, empty; C. P. 129378, merchandise; first class coach 101, and van 64. Aggregate damage to equipment, $29; labour repairing track, $170.69. Cause, broken wheel, car B. & S. 12381.

January 19th, Extra 116 south passing four poles south M.P. 175, car B. & S. 11344 derailed. Damage slight. Cause, broken brake shoe, leading truck dropping and derailing one pair of wheels.

March 4th, W. Brigginshaw, freight trucker, North Bay Junction, alleged sprained back while handling steel rails. Resumed duty March 22nd.

March 11th, Car B. & S. 10797 containing O. C. S. coal derailed coal chutes, Cochrane. Cost re-railing, $40; damage to coal chutes, $125. Responsible employees disciplined.

April 23rd, W. J. Ramsay, shed foreman, New Liskeard, while trucking freight had flesh between first and second finger of left hand alleged split open. Resumed duty May 1st.

April 26th, No. 47 passing M.P. 230¾ alleged killed calf. Owner, Chas. P. Scott, Nellie Lake, Ont.

May 6th, No. 47 passing M.P. 231¾ alleged killed cow. Owner, Chas. P. Scott, Nellie Lake, Ont.

May 11th, while Train No. 81 passing M.P. 73, car T. & N. O. 60316 derailed. Damage to track material and repairing track, $53.87. Cause, loose wheel.

May 25th, No. 61 passing M.P. 8¼, Elk Lake Subdivision, alleged killed cow. Owner, H. Robinson, Kenabeek, Ont.

June 2nd, Train No. 55 passing M.P. 39¾, Porcupine subdivision, alleged killed cow. Owner, J. Jutilo, Timmins, Ont.

June 7th, Robt. S. Sproule, freight trucker, North Bay shed, while trucking heavy case, slipped, alleged bruising knee cap. Resumed duty June 10th.

June 12th, Extra 103 north, while passing M.P. 133, alleged killed cow. Owner, P. T. Brown, Heaslip, Ont.

June 16th, No. 46 entering station grounds, Matheson, alleged killed cow. Owner, B. Forget, Matheson, Ont.

June 20th, while Extra 137 south passing M.P. 35, following cars derailed: G. T. 24767, L. V. 17697, G. T. 15907, G. T. 17697, and C. M. & P. S. 204829. Cause, unknown. Leading truck, G. T. 24767 loaded with wood-pulp, derailed, immediately slewed around and locked. This was eleventh car from engine and twenty-second car from van. Damage to equipment, $1,506. Damage to track material, and labour repairing track and clearing wreck, $785.41.

June 23rd, J. R. Nicolson, passenger, New Liskeard to Osseo, attempted to step off Train 62, while in motion, entering Earlton Junction station, staggering against train, was alleged fatally injured.

July 1st, No. 46 while passing M.P. 10½, alleged killed cow. Owner, C. A. Decks, Feronia, Ont.

July 6th, Car C. P. 58116 standing on siding, Canadian Pulp & Lumber Co. Limited, Latchford, partially destroyed by fire, which originated in plant of the C. P. & L. Co., Ltd. Estimated damage to car, $108.

July 9th, Train No. 1, while passing public road crossing ten poles north of M.P. 214, alleged killed horse. Owner, Wm. Good, Homer, Ont.

July 13th, E. Cripps, freight checker, Cobalt, alleged injured right foot while handling heavy steel shaft. Resumed duty July 21st.

July 13th, Train No. 1, while passing five poles south M.P. 205, alleged killed horse. Owner, M. Attallah, Matheson, Ont.

July 22nd, Train No. 55, while passing M.P. 34¾, Porcupine subdivision, alleged killed cow. Owner, Jos. Heculaki, South Porcupine, Ont.

July 26th, Brakeman F. A. Saunders, Train 47, while pulling out of Cobalt yard, and looking to rear of train, alleged struck by cars standing in siding, sustaining slight cut on head, and badly shaken up. Resumed duty Aug. 14th, 1915.

July 27th, Geo. Griffiths, stower, North Bay freight shed, alleged slightly injured thumb, while stowing heavy box. Resumed duty July 29th, 1915.

Aug. 12th, while Extra 129 south passing public crossing, M.P. 130, alleged killed cow. Owner, W. Bailey, Earlton, Ont.

Aug. 16th, No. 83, while passing M.P. 14½, North Bay subdivision, alleged killed cow. Owner, A. New, Widdifield, Ont.

Aug. 25th, while Extra 137 south, passing public road crossing, Feronia station grounds, alleged killed cow. Owner, J. Meadows, Feronia, Ont.

September 2nd, No. 55 while passing M.P. 15½, Porcupine subdivision, alleged killed horse. Owner, M. C. Jos. Dajenias, Barbers Bay, Ont.

September 4th, Train No. 55, passing thirteen poles east of M.P. 33, Porcupine subdivision, alleged killed bull. Owner, S. Slotnick, South Porcupine, Ont.

September 12th, Engine Extra 101 west, while passing thirteen poles east of Mountain Chutes, alleged killed cow. Owner, William McDougall, Cane, Ont.

September 13th, No. 46, while passing public road crossing, M.P. 132, alleged killed cow. Owner, A. O. Houghton, Heaslip, Ont.

September 15th, No. 55, while passing Three Nations, alleged killed cow. Owner, H. M. Porteous, Three Nations, Ont.

October 1st, Train No. 51, entering station grounds, Barbers Bay, alleged killed cow. Owner, A. Charpentier, Barbers Bay, Ont.

October 30th, while Work Extra 104 passing Barbers Bay, alleged killed pig. Owner, F. Charpentier, Barbers Bay, Ont.

Herewith reports Dr. McMurchy, North Bay; Dr. J. S. McCullough, New Liskeard; Dr. Lowrey, Englehart; Dr. McKee, Elk Lake; Dr. Bailey, Cochrane, and Dr. Moore, Schumacher, covering medical attendance.

REPORT OF DR. A. McMURCHY.

I am pleased to report that no serious accidents occurred on my division during the year ending October 31st, 1915. There were a number of minor accidents, mostly at the shops, but no serious results followed any of them.

REPORT OF DR. J. S. McCULLOUGH.

I beg to submit herewith my annual medical report for the year ending October 31st, 1915:

Month	Hospital and Town Visits.	Office Consultations, Dressings and Medicine.	Visits Out.	Surgical Operations.
November, 1914	16	19	2	–
December	15	15	4	–
January, 1915	14	19	–	–
February	32	21	–	1
March	35	20	1	1
April	24	21	5	2
May	24	21	2	1
June	27	30	1	1
July	24	27	–	1
August	21	22	7	–
September	18	27	3	–
October	28	33	4	1
Total	278	275	29	8

REPORT OF DR. R. C. LOWREY.

I beg to submit herewith medical report for this district, year ending October 31st, 1915:

(a) Medical Cases:

Nephritis	1
Measles	12
Tonsilitis	8
Dysentery	5
Nervous Prostration	4
Pneumonia	1
Otitis Medea	3

(b) Surgical Cases:

Injured feet	2
Blood poisoning	2
Injured fingers	3

There were also a large number of minor ailments treated by me, including Rheumatism, Bronchitis, Dyspepsia, also minor cuts and bruises.

REPORT OF DR. J. G. McKEE.

Annual medical report, T. & N. O. Railway, Elk Lake Branch, year ending October 31st, 1915:

Office calls	42
Visits to patients in Elk Lake	26
Visits to Earlton	6
Visits to Elk Pit	2
Visits to Osseo	4
Accidents (Minor)	2

REPORT OF DR. G. T. BAILEY.

Beg to report that there have been no serious accidents on my District, for year ending October 31st, 1915, and medical cases which have come to my attention have been of a minor nature.

REPORT OF DR. H. H. MOORE.

I beg to report for the year ending October 31st, 1915, the following cases of accident and sickness among the employees of the T. & N. O. Railway, on that part of the line between Iroquois Falls and Timmins:

Cases of Accident:

Hand bruised	1
Finger crushed	1
Burns	1
Finger bruised	1
Cuts on face	1
Bruised hip	1
Foreign body in eye	1

Cases of Sickness:

There was one case of each of the following: Bronchitis, Anaemia, Tonsilitis, Headache, Indigestion, and several cases of severe colds.

There were no epidemics of sickness, and no serious accidents, and all made good recoveries.

Respectfully submitted,

W. A. GRIFFIN,

Supt. of Traffic.

First "National" Train Leaving Cochrane Station for Winnipeg, July 14th, 1915.

Union Station, Cochrane, July, 1915.

GENERAL FREIGHT AND PASSENGER DEPARTMENT.

Annual Report—Year Ending October 31st, 1915.

The amount of freight handled during the fiscal year ending October 31st, 1915, and the gross receipts therefrom, show the following comparison as against 1914:

Tonnage 1915	676,938	Revenue.....	$925,735 37
Tonnage 1914	742,366	Revenue.....	952,090 35
Decrease, 1915	65,428	Decrease, 1915....	$26,354 98

The above shows that while our tonnage decreased 65,428 tons during year 1915 our revenue decreased only $26,354.98. This is largely accounted for by the fact that in 1914 our average distance haul per ton, was only 116.24 miles, while in 1915 the average distance was 140.25 miles.

Pulpwood, and other forest products, woodpulp, paper, coal and coke, sand, stone, etc., made up approximately 75 per cent. of our entire tonnage.

On these commodities the gross earnings are only about one-half (½) cent per ton per mile.

Our average gross earnings per ton per mile was 1 cent, so that the 25 per cent. of higher class freight has to be looked to to maintain our average earnings.

The Abitibi Power & Paper Co., located at Iroquois Falls, who have been shipping woodpulp since August, 1914, have now completed their paper mill and have been shipping large quantities of newsprint paper since July last.

When the Dominion Government took over the Transcontinental Railway last July, a new through transcontinental route was established, comprising the Grand Trunk Railway, Temiskaming & Northern Ontario Railway, Transcontinental Railway and Grand Trunk Pacific Railway.

Freight has been moving from Toronto and other points in Ontario to Winnipeg inside of five days and the new route is proving very popular.

The total amount paid for loss and damage claims during the year was	$6,604.98
Insurance and other credits	3,498.91
Balance chargeable to loss and damage	$3,106.07

This represents approximately ⅓ of 1 per cent. of gross freight receipts, while the average of all Canadian lines for loss and damage is 1 per cent. of gross freight receipts.

Passenger traffic compared with 1914 shows as follows:

Passengers carried 1915 .	480,995	Revenue.....	$482,349 80
Passengers carried 1914 .	535,869	Revenue.....	544,820 08
Decrease, 1915	54,874	Decrease, 1915....	$62,470 28

This decrease is due to the unfortunate conditions prevailing on account of the war.

With the commencement of the new Transcontinental train service, July 11th, passenger earnings have shown a decided improvement and as the service becomes more widely known, a still greater improvement may be looked for.

Temiskaming and Northern Ontario Railway.

GENERAL FREIGHT AND PASSENGER DEPARTMENT

Statement of all Baggage, Corpses and Bicycles Handled during the Fiscal Year Ending October 31st, 1915.

Station	Baggage		Corpses		Bicycles		Total 1915	Total 1914	Increase	Decrease
	Forwarded	Received	Forwarded	Received	Forwarded	Received				
North Bay	13,493	11,869	.....	33	.....	.....	25,395	37,605	.....	12,210
North Bay Junction	4,300	684	.....	.....	.....	.....	4,984	6,192	.....	1,208
Widdifield	188	239	.....	.....	.....	.....	427	551	.....	124
Tomiko	270	301	.....	.....	.....	.....	571	765	.....	194
Diver	330	234	.....	.....	.....	.....	564	759	.....	195
Temagami	1,516	1,990	1	.....	.....	.....	3,507	5,178	.....	1,671
Latchford	565	573	1	1	.....	.....	1,140	1,710	.....	570
Gillies Depot	136	185	.....	.....	.....	.....	321	918	.....	597
Cobalt	8,616	7,818	15	1	15	8	16,473	22,247	.....	5,774
North Cobalt	784	848	3	1	2	.....	1,638	1,981	.....	343
Haileybury	8,079	6,606	19	3	.....	2	14,709	18,905	.....	4,196
New Liskeard	4,797	4,114	12	2	8	10	8,943	11,194	.....	2,251
Uno Park	317	395	1	.....	.....	2	715	845	.....	130
Thornloe	331	393	1	2	.....	2	729	916	.....	187
Ealton	1,399	1,073	2	.....	3	5	2,482	2,994	.....	512
Elk Lake	1,041	1,078	1	1	.....	1	2,122	3,314	.....	1,192
Heaslip	272	376	.....	.....	.....	.....	648	808	.....	160
Englehart	4,116	3,506	.....	3	5	6	7,636	9,011	.....	1,375
Charlton	628	900	3	.....	.....	.....	1,531	2,186	.....	655
Dane	420	841	2	.....	.....	.....	1,263	1,453	.....	190
Swastika	1,699	1,608	2	.....	.....	.....	3,309	3,791	.....	482
Matheson	1,644	1,902	1	2	3	2	3,554	3,446	108	.....
Porquis Junction	2,156	2,136	1	.....	.....	.....	4,293	4,816	.....	523
Iroquois Falls	2,075	1,924	3	.....	.....	.....	4,002	1,920	2,082	.....
Porcupine	589	649	1	.....	.....	.....	1,239	1,916	.....	677
South Porcupine	3,302	3,096	4	2	7	5	6,416	6,675	.....	259
Schumacher	618	788	1	.....	.....	.....	1,407	1,533	.....	126
Timmins	4,230	4,828	.....	.....	.....	.....	9,058	6,555	2,503	.....
Cochrane	6,081	6,030	.....	2	8	7	12,128	14,306	.....	2,178
Total Year, 1914–1915	73,992	66,984	74	53	51	50	141,204	174,490	4,693	37,979
" " 1913–1914	84,681	89,527	62	50	100	70	174,490	.....	.....	.....
Increase	.....	.....	12	3	.....	.....	.....	.....	.....	.....
Decrease	10,689	22,543	.....	.....	49	20	33,286	.....	.....	33,286

Statement of Baggage Claims

RECEIVED, PAID, UNDER INVESTIGATION, Etc.

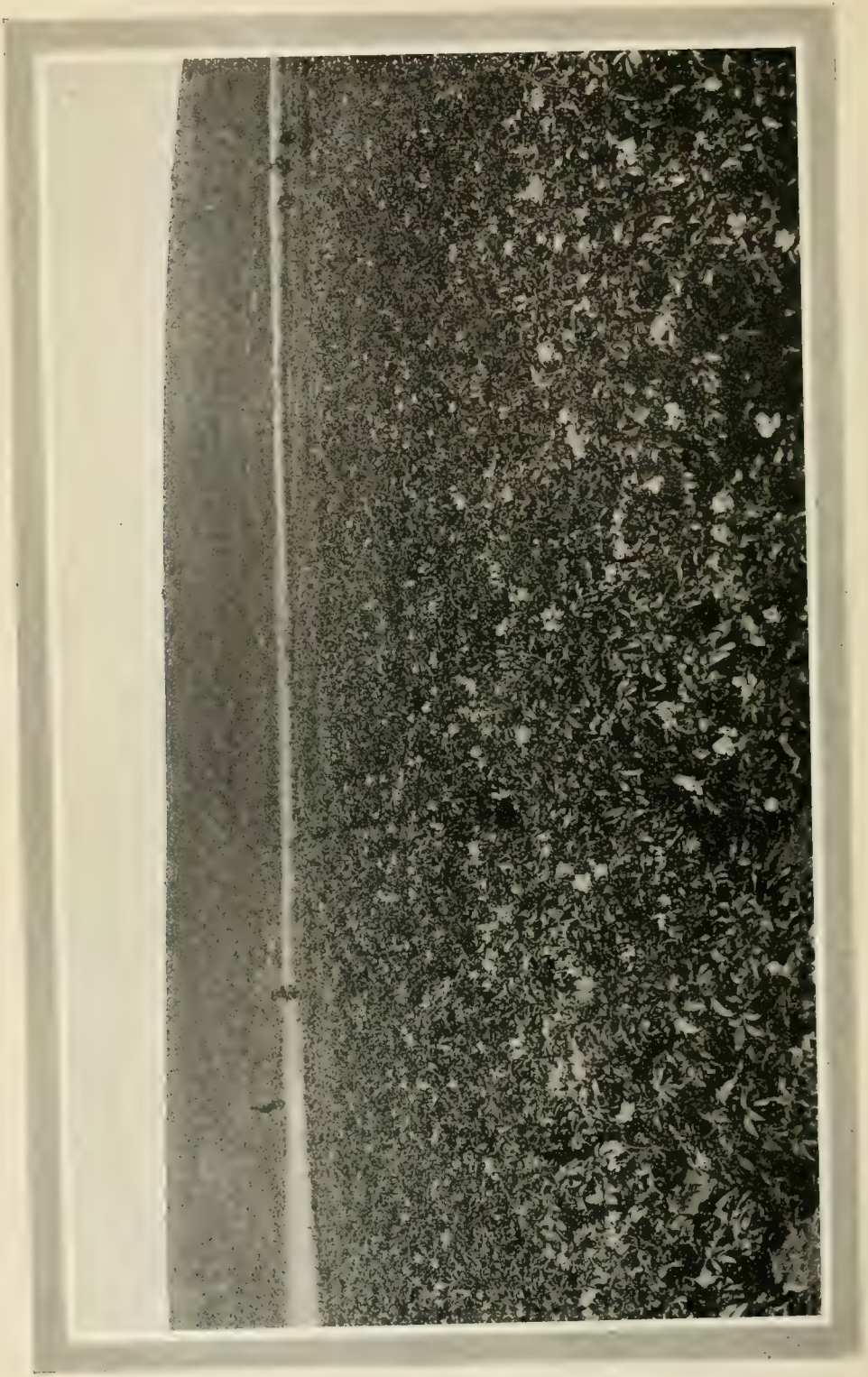
Number Baggage Claims 7. Amount $218 50.

5 Claims Vouchered (Amount claimed)	$203 50	Vouchered for $162 25
2 Claims Declined (Amount claimed)	15 00	
Total	$218 50	

Under Investigation. Nil.

Statement of Credits, Baggage, 1914-15

Charged connections	$13 86	Lloyd claim.
Total credit	$13 86	
Total debit	162 25	
Net debit	$148 39	



Field of Potatoes, E. F. Stevenson's Farm,, New Liskeard, Ont., 1915.

OFFICE OF THE COMMISSIONER.

Year ending October 31st, 1915.

GEO. W. LEE, COMMISSIONER.

In a great many ways this year, in our history, opened with none too good an outlook. The great war in Europe, in which Britain was one of the chief combatants, had been under way one year and three months and the dislocation caused was so great and widespread that it was little wonder that our districts were affected. They were relatively new and therefore more easily affected than older sections of Ontario.

Nevertheless, after twelve months of elapsed time, many doubts and fears have been dispelled and at present time much optimism is prevalent both in forests, fields and mines. Few now think anything but that we and our people will come through the storms that are sweeping the world, faring as well, if not better, than most of the homes of Canada.

The amount of land made ready to receive grain crops was greater than in any previous year in our history. Much fall ploughing had been done and the spring season of 1915 opened early, permitting of the very best conditions prevailing at time of seeding. Good seed grain was furnished the settlers and farmers, by the aid of the Ontario Government, and the results were the best crops ever seen in the districts served by the T. & N. O. Railway, and quite the equal of those grown any place in Canada in any year.

There may have been those who had their doubts about the fertility of northern soil—previous to this season—but one would have to go outside of our districts now to find such a one. From Haileybury to Hearst, on every side, the same excellent crops were to be seen—the more northern and western sections yielding quite as abundantly as the southern and easterly sections.

In some cases lodgement of grain occurred, but when one considers the great weight of growth the wonder is that the crops stood as well as they did, seeing that many violent wind storms swept our section as well as the older sections of Ontario. The strength of the straw was so great that many fields came through the stress without any harm.

Very little frosts were encountered during the summer season. Nearly all the grain sown ripened and was a good sample.

Root and vegetable crops were the usual type grown in the north—as good as ever were grown anywhere. A visit to any of the fall fairs, or to the Government Exhibition Car, would show this.

Great quantities of pulpwood were made this season—111,000 cords. Many, who had never touched pulpwood before, were at the cutting of it. At the beginning of our financial year, namely, November 1st, 1914, there were few buyers in the field prepared to pay cash for wood delivered at their mills—many of the large users of pulpwood were in grave doubts as to their ability to finance operations, owing to the stringency of the money markets. The Commission sent Mr. W. J. Bauldry south to see if wood could not be sold. He went in among the pulp and paper makers of Ontario, and while not able to sell pulpwood, he was able to come back with the word that the stocks of pulpwood held at the mills were altogether inadequate to supply the needs of the country, even in a very small way. This gave us some encouragement and a campaign of publicity was started

by us with the result that to-day every cord of wood along the line of this railway is sold, or may be sold and that at a good fair price.

The Abitibi Pulp & Paper Mills, at Iroquois Falls, are about completed and are now manufacturing several carloads of paper each day. They are, without doubt, the finest and most modern mills in Canada and are said to be the best in the world.

A large pulp plant is being installed at Jacksonboro. The mill will be about three miles south-east of Jacksonboro, on the Matagami River. A short railway is now being built to where the mills will stand.

A lumber and rossing mill has been erected at Monteith and will be in operation in the spring of 1916.

Many rossing mills have been installed this past year at various points along our line, to meet the demand for rossed wood. Besides, there are many portable rossers at work, or have been at work until the wood taken out was rossed.

Lumbering has been quieter this season than for some former seasons. This was owing to the war, which promised to curtail the need of lumber, but at present time lumber is in good demand again and some of the smaller mills are busy cutting again. The outlook for the future is good. The larger mills, which kept running, have large stocks of lumber on hand and they are likely to reap a rich harvest.

The business done in railway ties this year was not up to the standard of former years. This can be accounted for, partly by the depression caused by the war and very largely by the completion of the T. C. Railway and the small requirements of the T. & N. O. Railway. However, there was an outside market for limited quantities of cedar and other kinds of ties.

Telegraph and telephone poles, and pile timber were all in demand but not to the same extent as in former years. Much prospecting has been done and many promising new finds have been made in the gold field at Mindoka, Boston Creek, Munro, Beatty, the Porcupines, Kowkash and other points along the Transcontinental Railway are entirely new finds, and while not on the line of the T. & N. O. Railway the discoveries were the result of the endeavours of our prospectors. Many of the older finds and veins have been developed; development that has disclosed great wealth.

The amount of Crown lands sold during the year exceeded that of last year by 29,440 acres—even though hundreds of Ontario's young men have been called to arms and immigration has almost ceased.

The following Crown Land Agencies sold land as follows:

	Farms.	Acres.
Matheson	273	43,680
Cochrane	211	33,760
Hearst	173	27,680
Englehart	133	21,280
New Liskeard	72	11,520
Haileybury	9	1,440
Elk Lake	54	8,640
Making a total of	925	148,000

A great many parties have gone on and completed their improvements and got their patents for their farms. The number of patents issued are as follows:

New Liskeard Agency	70
Englehart Agency	46
Matheson Agency	20
Cochrane Agency	14
Total	150

Anyone who was through the country last year and again this year can easily realize what is being done.

Much farm machinery has come to the districts this year—among others things and notably the self-binders and threshers. Besides those named all kinds of other implements from the common walking plow to the driving disk plow—the hand rake and the sulky rake—the scythe and the mower—the grain cradle and the binder—the manure fork and the manure spreader—sewing machines the grain drills—forks and hay-forks—slings and rack lifters—waggons, buggies, etc.

Many new frame barns have been built—many new frame and better than frame homes have been built. Wire fences are being erected in many of the older, and in some of the newer sections of the districts. Tile and other draining is being installed. Excellent stock is being bought—much has been brought in this year. This includes horses, cows, sheep, hogs, goats, hens, ducks, turkeys as well as many are getting honey bees and the returns from same are very good, as this is a noted clover district.

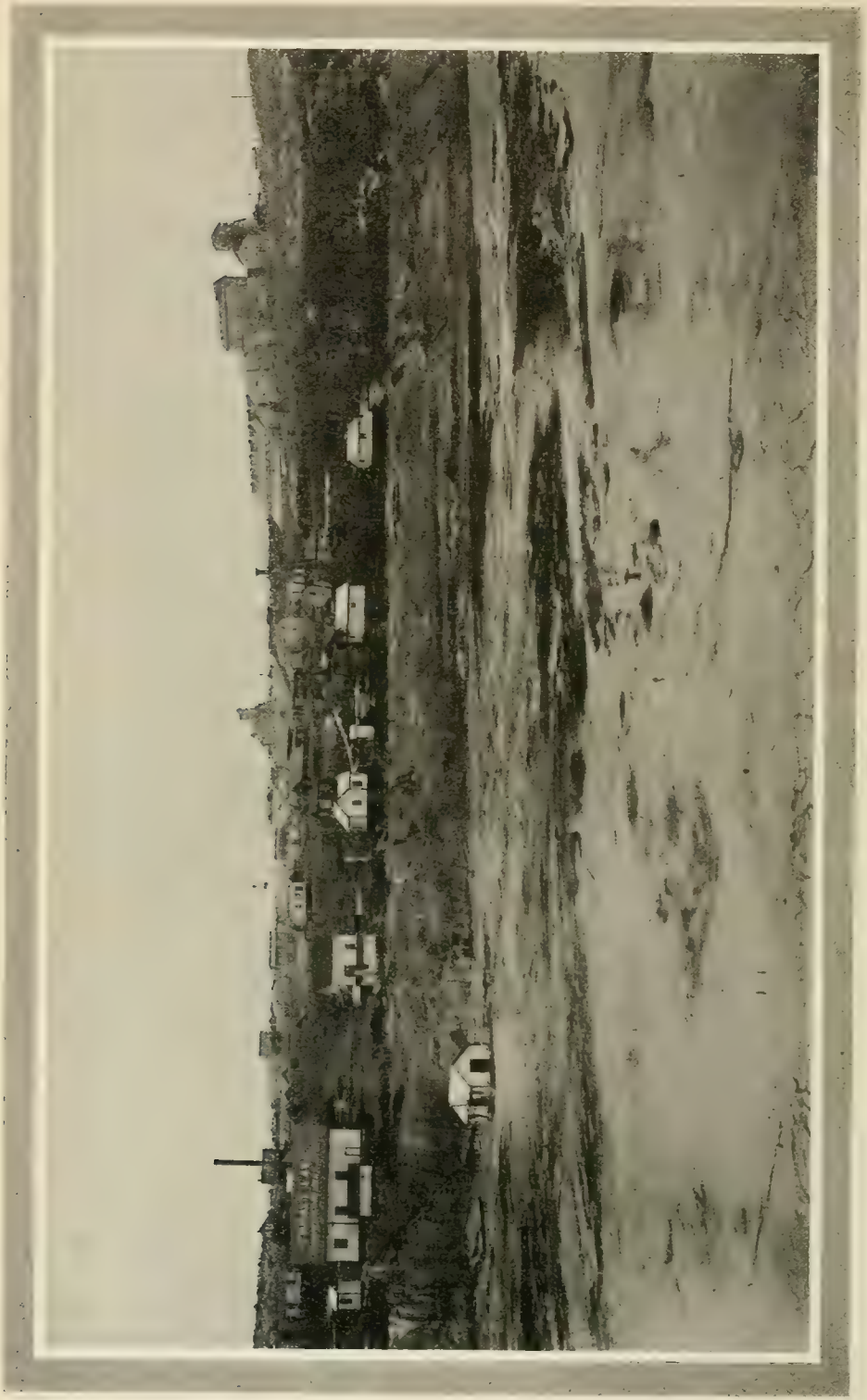
Wherever and whenever complaints have been made, of whatever kind, a visit has been made to those so complaining and relief given if at all possible. Wherever settlers have asked for consideration, such as the installation of spurs, the making of crossings, the erection of fences, etc., careful consideration has been given and usually the requests were complied with, or will be in due course.

Assistance and advice has been given in cases and good results have come from so doing. Many requests have come from people living out of our districts for information, particulars, etc., and in every case a suitable reply has been sent and this after making long trips and going to considerable pains to learn and see first hand, making personal visits to lots, etc.

There has not been so much land cleared this year in the older sections as in former years. This may be accounted for by taking into account that when much land is already cleared there is not time to spare from its cultivation to permit of so much clearing being done. In the newer sections, around Cochrane and Hearst, and between those points, more than ever has been cleared this year and most of it has been put under cultivation as well; what is not, will be this coming year. Along the Elk Lake Branch, which is relatively a new section, there has been many new fields made. The same can be said of the Porcupine Section and in all the outlying sections—away back from observation as from the train window—much clearing has been made. So much in places that astonishment is the only way to describe it.

There is no distress that we know of in the districts at present time. No doubt there are those who are hard up, but this condition is always existent in every part of every country.

In conclusion I think I can safely say we have had an exceptionally prosperous year, when we take everything into consideration, and that we may look forward to the future with confidence and hopefulness. When the smoke of battle is cleared away and swords are turned into ploughshares there will be no country in the world where they will be used to better advantage than in the land served by the Temiskaming and Northern Ontario Railway.



Pumping out Cobalt Lake, September 2nd, 1915. Looking east from railway embankment in front of Cobalt Station.

Preliminary Report of the Mining Industry in that part of Northern Ontario served by the Temiskaming and Northern Ontario Railway, Calendar year 1915.

By ARTHUR A. COLE, Mining Engineer.

The business depression which resulted from war conditions was felt in the mining industry of the Temiskaming district, but to a much smaller extent than in many other lines of business activity. The falling off in the production of silver was made up by the increase in the production of gold, so that the combined production of the precious metals remains about the same as for 1914.

The huge sums of money spent on this continent for war munitions resulted in the accumulation of large dividends and stock profits, and of this surplus money much was available for mining enterprises. At the same time claim holders were more ready than formerly to listen to reasonable propositions and as a consequence there was much activity in the mining districts and many prospects changed hands to interests that are more likely to proceed with active development.

Production costs have been increased in both gold and silver camps by the increased cost of chemicals and other supplies. The shortage of the supply of good zinc dust has been a fruitful source of worry for the mine manager. A considerable quantity of Japanese zinc is now finding its way into the market, costing about 28½ cents laid down in Porcupine. For large quantities the price is lower. The grade is good, running about 90 per cent. metallic zinc. The quantity, however, is limited, as it is produced as a by-product. If the demand for zinc dust is greater than that which is produced as a by-product it has to be manufactured direct from spelter. The cost is high, running it up in this case to 35 cents per lb. The cost of good Belgian zinc dust before the outbreak of the war was 6¾ cents per lb. at Cobalt. Under normal conditions Mexico has a large consumption of zinc dust which is supplied locally. The fear is expressed that with the re-establishment of more settled conditions the call for zinc dust will arise before the local zinc is again being produced, and in that case outside zinc will be called for and the situation further complicated. It is usual to count on a consumption of ½ lb. of zinc dust per ton of ore milled. The rise in price of commodities, principally that of zinc, has caused the addition of 16 cents per ton to the milling costs of some of the Porcupine companies.

Gold.

The statistics of Ontario's gold production for the first nine months of the calendar year, issued by the Ontario Bureau of Mines, show the output to be steadily increasing. Most of the production came from Porcupine, but Kirkland Lake and Munro districts also assisted.

Gold Production in Ontario During Nine Months Ending September 30th, 1915.

Period 1915.	Value.
1st quarter	$1,568,043 00
2nd quarter	2,002,029 00
3rd quarter	2,256,869 00
Total for 9 months	$5,826,941 00

Porcupine:

At Porcupine the following mines produced gold during the year, and in almost all cases show increases over 1914. They are as follows in the order of production:

Hollinger.
Dome.
Acme.
McIntyre.
Porcupine Crown.
Vipond.
Dome Lake.
Schumacher.
Rea.
Excelsior.
Gold Reef.

The steady advance of the Porcupine camp is shown in the following production table:

PORCUPINE GOLD PRODUCTION, 1910-1915.

Year.	Value.
1910	$35,539 00
1911	17,187 00
1912	1,730,628 00
1913	4,284,928 00
1914	5,203,229 00
1915 (estimated)	7,650,000 00
	$18,921,511 00

Hollinger and Acme.—The Hollinger mill treats ore from both the Hollinger and Acme mines, but runs them in separate units. The tonnage of the mill has been raised till it is now 1,500 tons per day. Alterations are now within two months of completion, which will raise this tonnage to 2,000 tons per day; of this, 600 tons will be from the Acme. The new central six-compartment shaft which is being sunk on the Acme, from which it is proposed to work the Hollinger, Acme and Millerton properties, is now completed to a depth of 450 feet. The Hollinger and Millerton properties are connected on the 425 ft. level, and by the end of 1915 connection will also be made with the Acme. The Hollinger main shaft is down 800 ft., but by means of a winze a total depth of 1,200 ft. is attained. Plans are already under way which will increase the mill capacity to 4,000 tons per day to handle the expected tonnage from the three properties when they are opened up.

Dome.—A new vertical shaft, 14 x 16 ft., is being sunk on this property in record time. It will contain two compartments for hoisting ore, one larger compartment for men and supplies, and a fourth compartment to contain pipes, ladder way, etc. The capacity of the mill has been gradually increased till it is now about 950 tons per day.

McIntyre.—In August, this company acquired the McIntyre Extension, an adjoining property formerly known as the Pearl Lake Mine, and in October a controlling interest in the Jupiter was acquired. The McIntyre Extension shaft has been sunk from the 665 ft. level to the 900 ft. level and this is to be extended

to the 1,000 ft. level. It is the intention to drive from this shaft on the 600 ft. level into the Jupiter. This is to be the main working shaft for the consolidated properties. The development in the McIntyre property during the year has been the sinking of No. 4 shaft from the 400 ft. to the 600 ft. levels, and No. 5 shaft from the 400 ft. to the 700 ft. levels, and the opening up of the new levels thus reached. The average daily tonnage of the mill is now 300 tons. A new unit is under construction, and nearing completion, which will add a further 150 tons to the daily capacity.

Porcupine Crown. The main shaft runs to the 500 ft. level, but a further depth to the 700 ft. level is attained by means of a winze on the vein. This winze will be used as a temporary hoisting shaft till enough ore has been blocked out on the 6th and 7th levels to warrant a further sinking of the main shaft. During the year ore was drawn from the 2nd, 3rd, 4th and 5th levels, though most of it came from the 3rd and 4th levels. The average daily tonnage milled is 125 tons. When this mine was first opened up the mill used straight amalgamation without cyanidation, but as the tailings carried good values they were impounded for future treatment. During the summer of 1915, 8,000 tons of these tailings were re-treated, bringing the daily capacity of the mill up to 185 tons at that time. This can be done without interfering with the regular working of the mill as the cyanide equipment has sufficient capacity for this extra tonnage.

Vipond.—A winze has been sunk from the 300 to the 500 ft. levels and the 4th and 5th levels are now to be opened up. The capacity of the mill was increased in June last from 80 tons to 120 tons per day by exchanging the 4½ ft. Hardinge Ball mill for a 6 ft. mill.

Dome Lake.—The mill, which has been using plain amalgamation with subsequent table concentration and shipment of the concentrates to the smelter, has been treating about 1,100 tons per month. In order to produce better results it was decided to install a cyanide plant and it is expected to have this under operation early in 1916. The tonnage to be cyanided will be small as table concentration will be adhered to and only the concentrates cyanided.

Schumacher.—The Schumacher mill was started on the 1st September, and has been running regularly with an average daily tonnage of 95 tons. The ore is supplied by 1st, 2nd, 3rd and 4th levels and the shaft has been sunk further to the 600 ft. level, on which level development is proceeding.

Sesekinika:

Very little development outside of assessment work was done in this district during the year. The surface work on the Smith-Labine claim shows up a number of new and promising veins and late in the year an option on this property was taken up by the Kerr Lake Company, and active development is now planned.

Swastika:

The mine and equipment of the Swastika Mining Company was bought in at a liquidator's sale by the same interests as control the Beaver and Temiskaming mines at Cobalt. The mine has been pumped out and some development work started.

Kirkland Lake:

The Tough-Oakes mine has been a steady producer during the year. The new mill has a daily capacity of about 100 tons. Underground development has

been very satisfactory, but was retarded for some time during the latter part of the summer on account of shortage of power. Power is delivered from a hydro-electric development at Charlton.

The Teck-Hughes mine has been bought by controlling interests of the Buffalo mine, Cobalt. A mill building has been erected and the machinery and other equipment have been ordered and will be installed as soon as received.

Goodfish:

A number of promising discoveries have been made on claims in the vicinity of Goodfish Lake, which is situated near the north-east corner of the Township of Teck. An option on some claims known as the Gibson claims has been taken up and development has been pushed as far as feasible by hand, and now a small plant is to be installed.

Munro:

After many disappointments a producing property has been found in Munro Township, which is known as the Dobie-Leyson claim. The company is now incorporated under the name of "The Croesus Gold Mines Limited." A white quartz vein lying at an angle of 27 deg. has been developed by a shaft sunk 200 ft. on the slope. The ore is patchy but spectacular. Over $100,000 in gold was taken out in sinking the shaft 110 ft. The property is being developed with a small steam plant and is also being diamond drilled. It is situated about eleven miles east of the Town of Matheson.

Boston Creek:

Two companies, the Rap Mining Syndicate and the Dominion Reduction Company, of Cobalt, are developing properties with gold prospects about ¾ mile east of mileage 153½ on the T. & N. O. Railway. Several other claims further east show free gold, the most promising being one in the 6th Concession, Pacaud, about three miles east from Mindoka station.

Kowkash:

On August 21st, 1915, Mr. E. W. King Dodds made a spectacular gold discovery while walking over a rocky hill below Howard Falls on Kowkash River. The discovery is nine miles north-westerly from Kowkash station on the National Transcontinental Railway, 297 miles west of Cochrane. The news of the find caused a rush of about 400 prospectors to the neighbourhood and from 75 to 100 claims were staked within three weeks. Development will proceed on the Dodds claim during the winter, but throughout the rest of the district very little development will be started before next spring.

Silver.

The silver production of Ontario is made up for the most part by the mines in the Cobalt district, the small remaining portion being recovered in the gold mills.

An estimate of the production for the calendar year 1915 is $11,000,000, which is a falling off of $2,179,973 from the preceding year.

The official returns for nine months of the year are as follows:

SILVER PRODUCTION IN ONTARIO DURING NINE MONTHS ENDING SEPTEMBER 30TH, 1915.

Period 1915.	Value.
1st quarter	$2,488,909 00
2nd quarter	2,699,854.00
3rd quarter	2,841,706 00
	$8,030,469 00

The low price of silver had a very depressing effect on the silver mining industry. Several of the mines closed down and most of the others curtailed their output. Several continued shipments but took their returns from the smelters in bullion, which they held looking for a rise in price. The hoped for rise came in November and since then production has been active.

The price of silver in London and New York during the year has been as follows:

Month.	New York.	London.
January	48.855	22.731
February	48.477	22.753
March	50.241	23.708
April	50.250	23.709
May	49.915	23.570
June	49.034	23.267
July	47.519	22.597
August	47.163	22.780
September	48.680	23.591
October	49.385	23.925
November	51.714	25.094

New York quotations cents per ounce troy, fine silver. London, pence per ounce, sterling silver, 0.925 fine.

The lowest price for the year was 46.25 cents, which was reached on September 1st.

Cobalt:

At Cobalt the principal producing mines were the Nipissing Mining Corporation of Canada, Coniagas, Kerr Lake, Seneca Superior and Temiskaming. In all, seventeen companies shipped from Cobalt. The ore shipments averaged 1,302.43 tons per month for eleven months of the year and besides this there were the bullion shipments from the Nipissing, Dominion Reduction, Cobalt Reduction, Buffalo and O'Brien mills, which went out by express.

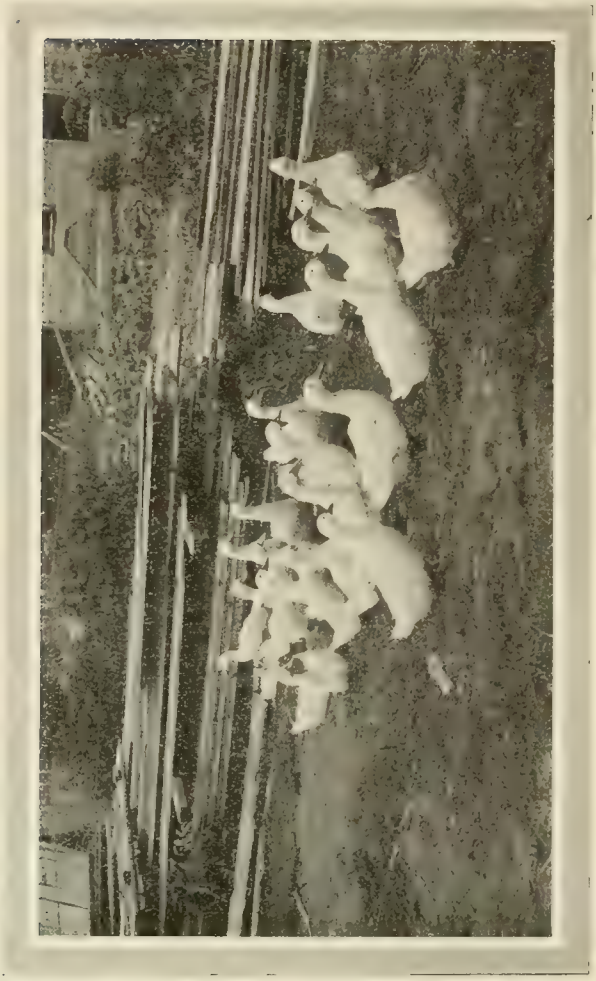
Casey Township:

Considerable prospecting was done in this district, but the only producer yet is the Casey Cobalt.

Gowganda:

Shipments have continued regularly from the Miller-Lake-O'Brien mine throughout the year, but this was the only shipping operating property.

Small forces have been operating on the Hewitt claim, as well as on the Powerful at Calcite Creek, and the Rogers claims at Flatstone Lake. In December, the Reeves-Dobie claims were re-opened under new management.



White Pekin Ducks, near Englehart, Ont.

South Lorrain:

No shipments were made during the year, but the Bellellen, Keeley and Currie carried on some operations.

Nickel.

The Mond Nickel Company continued during the year to take ore from the Alexo mine to be mixed with their own ore and treated at their smelter at Coniston, Ontario. The Alexo ore has a higher average nickel content than the Sudbury ores, but is very low in copper. To work the Mond process to the best advantage the nickel and copper contents of the ores treated should be approximately equal. The Mond Company's ores are higher in copper than in nickel, so they use the Alexo ores as an equalizer. The magnesian content is also a favorable feature.

A statement of shipments for eleven months of the year is given herewith:

Nickel Shipments Over the T. & N. O. Ry.

January 1st to November 30th, 1915.

Month.	Tons (2,000 lb.)
January	808.30
February	839.15
March	878.95
April	665.00
May	981.95
June	989.10
July	1,070.80
August	766.50
September	583 90
October	799 85
November	1,305.10
	9,688.60 tons

Copper.

A shipment of 22½ tons of copper ore was made from a property on Portage Bay near Latchford to the sampling works of Campbell & Deyell, at Cobalt, where it awaits shipment to a smelter. The ore is chalcopyrite and assays: copper, 13.33 per cent.; silver, 12.6 oz.

Zinc and Lead.

The old Wright mine on the Quebec side of Lake Temiskaming, which was known as far back at 1744, was recently pumped out by the owners, the Timmins-McMartin syndicate. It was thoroughly sampled, but future development of this property has not yet been announced. The ore is a galena containing a little silver.

Wolf Lake:

Several promising veins containing zinc blende and galena have been located near Wolfe Lake about three miles from Bourkes station, mileage 183½, on the T. & N. O. Railway, but very little development has yet been done on them.

Molybdenite.

Specimens of excellent molybdenite have been produced from small veins from properties in the vicinity of Tomiko, mileage 28½ on the T. & N. O. Railway, but commercial quantities have not yet been produced.

Limestone.

The requirements of the sulphite-pulp plant of the Abitibi Power & Paper Co., of Iroquois Falls, for a dolomitic limestone are supplied from a quarry near Haileybury.

During eleven months of 1915, 2,023.5 tons of the material were shipped from this source.

Stores Department.

Statement of Purchases and Issues, Fiscal Years 1914-1915.

Stock.	1914. Purchases.	1914. Issues.	1915. Purchases.	1915. Issues.
Shop	$207,954 44	$236,403 70	$166,125 85	$166,159 35
Soft Coal	220,428 54	274,961 04	271,622 07	253,662 97
Hard Coal	11,468 07	10,456 45	10,615 55	10,872 96
Oil and Waste	12,797 07	12,557 57	12,172 09	12,190 73
Stationery	11,944 05	12,946 83	10,138 40	10,676 31
Rail Stock	58,600 94	64,360 55	34,345 99	19,520 37
Tie Stock	63,244 86	45,461 66	6,108 37	26,394 98
Ice Stock	3,787 00	4,230 50	2,550 55	3,303 50
Operation of Ballast Pits	.....	35,163 96	.....	20,198 01
Nipissing Central Rly.	41,685 89	46,081 31	7,390 19	11,107 33
Material for Private Cars	34,883 47	.....	.....	37,432 08
	$666,794 33	$742,623 57	$521,069 06	$571,518 59

	1914.	1915.
Total Issues	$742,623 57	$571,518 59
Total Purchases	666,794 33	521,069 06
	$1,409,417 90	$1,092,587 65
Pay Roll	$15,000 00	$15,300 00

Re Purchases and Issues.

Submit herewith summary statement of purchases and issues for fiscal year 1915, set in comparison with figures for 1914 covering the various stocks carried.

Aggregate purchases show a decrease of approximately $145,000 as compared with 1914.

Shop stock decrease is less than $42,000. Covering as it does the great variety of mixed material consumed on a railway, it goes to show that general efficiency has been fairly well maintained despite war conditions and also means something as regards labour.

Coal purchases show an increase because of entering 1915 with a small stock on hand, whereas we entered 1914 with a very considerable stock.

Rails and ties show large decreases in purchases, particularly ties. In the latter the issues were over $20,000 in excess of the purchases, which means a large reduction in stock—a desirable condition as it will tend to maintain a fresher stock.

Hard coal, oil and waste and stationery do not show a marked variation in volume, but the move is in the right direction, viz., a reduction in stock and consumption. There is a minimum that it is unsafe to go below in many varieties of material. Our object has been to keep as near that line as safety will permit, and we believe comparisons from year to year show some advancement toward the goal—economy.

Iron and steel prices have all advanced owing to war conditions—same applies to rubber and cotton, all of which figure quite largely in railway material.

Lumber in the earlier part of the year showed a slackening in prices but later an upward tendency, but on the whole we have never secured better prices than secured this year.

The transfer of Road Department stock to stores has meant considerable increase in work and responsibility devolving upon the staff and the end is not yet. Increasing intercourse with the G. T. Railway and the Transcontinental has brought in its wake much work that was only a dream a few years ago, but now a stern reality that stamps its impress on accounting and other work affecting Stores Department in common with other departments. The addition of road stock to stores called for increased accommodation, which was met by moving a part of the former road storehouse alongside of stores building and is serving a useful purpose—but time may show that some further improvements may be required to secure economical handling of material.

In closing would express our appreciation of the courtesy and assistance of other departments during the year and especially during the period required in moving and replacing road material in new quarters.

There has been very few changes in staff during the year and thank them for their loyalty to the general interests of the T. & N. O. and Stores Department in particular, and would especially thank the Commission for their assistance and consideration during the past year.

Yours truly,

W. A. Graham,

P. A. & Storekeeper.

Salmon Trout, weight 30 lbs, length 39 inches. Caught by A. A. Fraser in Lake Reuben, near Redwater Station on T. & N. O. Railway.

FINANCIAL STATEMENTS

GENERAL BALANCE SHEET.

ASSETS.

Property Owned :—		
Cost of Road as of Oct. 31, 1914	$17,747,053 65	
Cost of Road for year ended Oct. 31, 1915	166,646 83	
		$17,913,700 48
Cost of Equipment as of Oct. 31, 1914	$2,227,561 27	
Cost of Equipment for year ended Oct. 31, 1915	15,563 61	
		2,243,124 88
Nipissing Central Railway		464,677 97
Empire Lumber Co. Plant, Latchford		7,176 50
Working Assets :—		
Cash—Treasurer	$362,828 90	
Cash—Land Agent	9,108 36	
Accounts Collectible	158,387 28	
Agents and Conductors	9,645 21	
Traffic Balances—Freight	24,526 97	
Traffic Balances—Tickets	9,174 45	
Material and Supplies	252,514 49	
Ballast Pit Operations	51,354 67	
Other Assets	2,209 71	
		879,750 04
Deferred Debit Items :—		
Paymaster's Advance	$7,000 00	
Treasurer's Advance	50 00	
Insurance Paid in Advance	1,195 29	
Accounts in Suspense	1,525 26	
		9,770 55
		$21,518,200 42

LIABILITIES.

Provincial Loan Account		$20,483,415 77
Working Liabilities :—		
Accounts Payable	$432,815 65	
Traffic Balance—Car Mileage	5,091 48	
Unclaimed Wages	671 85	
Operating Reserve for Equipment	177,453 05	
Deposits on Sidings	1,443 50	
Stores in Transit	1,064 30	
War Tax Available	580 58	
		619,120 41
Free Surplus :—		
Profit and Loss—Balance		415,664 24
		$21,518,200 42

PROFIT AND LOSS.

To Townsites	$614 33	By Balance, October 31, 1914	$409,715 90
" Uncollectible Accounts—Cancelled	72 49	" Revenue	210,538 63
" Paid Treasurer of Ontario	225,000 00	" Interest	20,629 53
		" Profit on Road and Equipment Sold	320 00
" Balance Carried Forward	415,664 24	" Unclaimed Vouchers—Cancelled	147 00
	$641,351 06		$641,351 06

STATEMENT OF EXPENDITURES ON CONSTRUCTION.

Fiscal Year Ended October 31, 1915.

Engineering	$4,919 81
Land for Transportation purposes	4,809 17
Grading	55,709 26
Bridges, trestles and culverts ..... *Cr.*	4,678 25
Ties	4,764 52
Rails	8,570 98
Other track material	13,599 66
Ballast	8,017 58
Track laying and surfacing	8,678,71
Right-of-way fences	3,606 01
Crossing and signs	3,426 07
Station and office buildings	21,064 77
Roadway buildings	2,262 31
Water stations	11,530 76
Fuel stations	5,075 77
Shops and engine houses	9,251 93
Telegraph and telephone lines	2,633 82
Shop machinery	3,403 95
Steam locomotives	6,000 00
Freight-train cars	6,763 28
Passenger-train cars	1,393 27
Work equipment	1,407 06
Total	$182,210 44

DETAILED STATEMENT OF CHARGES TO CONSTRUCTION.

November 1st, 1914, to October 31st, 1915.

Main Line—

Engineering expenses	$657 18
Replacing timber trestle M.P. 153.5 with steel	70 82
" " " M.P. 48.9 "	12 90
New entrance, Cochrane	9,164 92
Additional sidings and new station, Earlton	5,826 85
New entrance to C.P.R., North Bay	11,736 80
Replacing trestle M.P. 196.8 with steel	669 01
New fencing	2,982 04
Excess cost continuous rail joints—rail renewals	626 24
Additional track fastenings	5,254 10
Re-arrangement, Cobalt yard ..... *Cr.*	1,497 29
Extension siding, Thornloe	96 45
Roadbed underdrainage	1,911 45
New public and private road crossings	2,175 34
New station, Heaslip	1,460 00
Reconstruction telegraph and telephone line	103 35
Replacing timber trestle M.P. 58.75 with concrete	226 44
" " " 59.41 " "	696 48
" " " 42.18 " "	826 24
Filling trestle, M.P. 57.31	42 01
Extension New Liskeard spur	2,439 95
Filling trestle, M.P. 55.94	65 15
Extension siding, Uno Park	195 64
New freight shed and sidings, Porquis Junction	1,606 76
Piling ground, Chamberlain and Extension siding, Wawbewawa	2,609 10
Dynamite siding, M.P. 104	57 21
New siding, M.P. 149.4	23 14
Additional shop machinery and water supply, Englehart	2,000 26
Extra Land for piling ground and improvements along siding, Nahma	1,688 80
Well for water supply, New Liskeard	962 76

New siding, M.P. 145.1	78 66	
Well, Heaslip	1,098 42	
Extra land for piling ground and siding, Heaslip	272 01	
Filling trestle, M.P. 25.71 and installing culvert	3,883 27	
" " M.P. 71.37 " " "	11,132 62	
Excess cost 10 ft. ties—Tie renewals	504 64	
Filling trestle M.P. 163.3 and installing culvert	10,498 97	
Widening embankments, M.P. 56-77	7,452 92	
Battery charging plant, Cochrane	680 36	
Additional shop machinery, North Bay	2,804 37	
Replacing open beam culverts with concrete	4,590 19	
Section house, Nushka	2,580 92	
Local telephone line, Sesekinika to Bourkes	484 61	
New platform and siding changes, Haileybury	92 52	
Water and steam line, passenger cars, Cochrane	2,371 45	
Coaling plant, Porquis Junction	6,106 68	
Additions to coach and carpenter shop, North Bay	6,793 03	
Water service, Porquis Junction	6,638 15	
Passenger train platform, Cochrane	509 38	
Extra land and new spur siding, M.P. 233	1,487 36	
New siding, M.P. 153½	1,195 55	
Telephone line, Swastika to Boston Creek	400 38	
Section house, Otter *Cr.*	22 50	
New fencing, North Bay terminals	99 99	
Improvements, freight shed platform, North Bay	4 20	
Section house, Monteith *Cr.*	1,000 00	
Roundhouse and coal chute, Cochrane	1,267 50	
Extension siding, M.P. 245½	295 94	
Boarding car and cinder storage siding, North Bay	1,712 92	
Right of way, N. ½ lot 8, Con. 5, Taylor	25 00	
Extension through siding, Cassidy	151 77	
Extension siding, Chamberlain	357 65	
Siding, Belleek	34 80	
" Riddle	30	
" M.P. 217	34 64	
Sand house, North Bay Junction	571 56	
Crossover, Cochrane	766 43	
Roadway, Bourkes	901 88	
Miscellaneous private sidings installed and taken up *Cr.*	1,970 36	
Lands sold along right of way *Cr.*	74 47	
		$129,503 81
Charlton Branch—		
Agent's house, Charlton	$352 93	
New fencing	49 11	
Well, Charlton	458 42	
Private sidings	652 95	
		$1,513 41
Elk Lake Branch—		
Shelter stations, Osseo, McCool and Beacon	$781 26	
New public and private road crossings	813 62	
New fencing	5 11	
Extension siding, M.P. 18.7	1,163 26	
New station, Elk Lake	2,563 85	
Engine house, Elk Lake	46 86	
Additional track fastenings	39 80	
Roadway and station grounds, Osseo, McCool and Kenabeek	1,889 95	
		$7,306 71
Porcupine-Iroquois Falls Subdivision—		
Extension siding and agent's house, South Porcupine	$785 33	
Houses for agent and section foreman, Timmins	1,061 46	
Public and private road crossings	924 63	
Alterations to station, Porcupine	88	
Completion grading, ballasting, etc.	14,155 55	
Telephone circuit, Porquis Junction to Connaught	218 16	
Shelter station and platform—Keys	323 35	
Telegraph and telephone circuit, Porquis Junction to Iroquois Falls	291 89	
Sidewalk, South Porcupine station	225 08	

Shelter station, Iroquois Falls "Y"	190 11	
Town siding, Porcupine, removed *Cr.*	742 84	
Siding, M.P. 13½	99 48	
Siding, Barber's Bay	34 80	
Transfer *re* land, "Y," Timmins	3 04	
Roadway, Schumacher	228 00	
Culvert, M.P. 30.37	208 05	
Public and private road crossings *Cr.*	123 32	
Coal chute siding, removed *Cr.*	381 97	
Private sidings installed	5,878 90	
		$23,380 58
Elk Lake, Gowganda Extension—		
Reconstruction Elk-Lake-Gowganda Telephone Line	$860 42	
		$860 42
Equipment—		
Steel passenger equipment	$105 69	
Improvements passenger cars	1,287 58	
Equipping locomotives with superheater	6,000 00	
Freight cars rebuilt	6,763 28	
Tank cars for fire purposes	1,407 06	
		$15,563 61
Special—		
James Bay exploration	$3,076 12	
Electrification of road—studies	1,005 78	
		$4,081 90
		$182,210 44

Comparative Statement, Earnings and Expenses by Years, 1905 to 1915 inclusive.

REVENUE.	1905	1906	1907	1908	1909	1910
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Freight Revenue	121,530 46	230,552 63	390,894 29	471,203 41	756,141 66	852,886 46
Passenger "	108,681 76	254,759 33	388,343 03	366,504 53	483,110 89	606,967 91
Other "	23,508 33	58,706 89	74,282 69	135,357 67	121,972 33	131,997 65
Total Revenue from Transportation.	253,720 55	544,018 85	853,520 01	973,065 61	1,361,224 88	1,591,852 02
EXPENDITURES.						
Maintenance of Way and Structures	25,072 89	77,265 87	112,395 22	125,563 43	191,170 18	380,314 75
Maintenance of Equipment	12,533 68	46,382 65	88,016 79	119,563 01	107,078 96	137,340 46
Traffic Expenses	.....	.....	.....	12,499 96	9,789 99	14,920 04
Transportation Expenses	88,342 41	215,256 08	412,160 52	405,907 58	436,768 41	556,740 45
General Expenses	13,823 52	23,194 61	32,839 76	24,863 45	49,989 34	76,045 66
Total	139,772 50	362,099 21	645,412 29	688,397 43	794,796 88	1,165,361 36
Net Operating Revenue	113,948 05	181,919 64	208,107 72	284,668 18	566,428 00	426,490 66
Other Income	.....	Dr. 393 37	50,901 32	134,820 27	89,443 21	9,639 65
Net Result	113,948 05	181,526 27	259,009 04	419,488 45	655,871 21	436,130 31
Doubtful accounts written off	.....	.....	.....	.....	Dr. 8,627 77	Dr. 5,923 80
Townsites	.....	.....	.....	.....	.....	.....
Profit on Road and Equipment sold	.....	.....	.....	.....	.....	.....
Interest	.....	.....	.....	.....	.....	.....
Unclaimed Vouchers	.....	.....	.....	.....	.....	.....
Unclaimed Wages	.....	.....	.....	.....	.....	.....
Total to Profit and Loss	113,948 05	181,526 27	259,009 04	419,488 45	647,243 44	430,206 51
Paid Treasurer of Ontario	100,000 00	158,154 47	235,090 69	350,000 00	550,000 00	420,000 00
Balance Profit and Loss	13,948 05	23,371 80	23,918 35	69,488 45	97,243 44	10,206 51

Comparative Statement, Earnings and Expenses by Years, 1905 to 1915 inclusive—Continued.

REVENUE.	1911	1912	1913	1914	1915	Total.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Freight Revenue	974,678 33	929,464 66	906,476 16	952,090 35	925,735 37	7,511,653 78
Passenger "	653,063 01	599,681 73	576,049 37	544,820 08	482,349 80	5,064,331 44
Other "	153,223 49	178,303 68	173,629 32	173,988 44	143,466 60	1,368,437 09
Total Revenue from Transportation.	1,780,964 83	1,707,450 07	1,656,154 85	1,670,898 87	1,551,551 77	13,944,422 31
EXPENDITURES.						
Maintenance of Way and Structures	353,918 92	346,964 01	430,820 04	408,046 15	325,865 86	2,777,397 32
Maintenance of Equipment	164,145 69	249,683 22	242,633 93	284,935 87	262,654 51	1,714,968 77
Traffic Expenses	17,705 31	17,461 22	16,857 36	18,872 65	18,135 13	126,241 66
Transportation Expenses	567,316 97	676,963 33	680,480 08	651,687 20	625,911 92	5,317,534 95
General Expenses	78,911 74	93,625 91	106,758 60	105,032 36	95,929 49	701,014 44
Total	1,181,998 63	1,384,697 69	1,477,550 01	1,468,574 23	1,328,496 91	10,637,157 14
Net Operating Revenue	598,966 20	322,752 38	178,604 84	202,324 64	223,054 86	3,307,265 17
Other Income	Dr. 5,813 51	131,449 36	76,718 88	26,652 59	Dr. 12,516 23	500,902 17
Net Result	593,152 69	454,201 74	255,323 72	228,977 23	210,538 63	3,808,167 34
Doubtful accounts written off	Dr. 76 57	.....	.....	.....	Dr. 72 49	Dr. 14,700 63
Townsites	.....	Cr. 77,831 57	Cr. 7,310 47	Cr. 44 67	Dr. 614 33	Cr. 84,572 38
Profit on Road and Equipment sold	.....	.....	.....	.....	Cr. 320 00	Cr. 320 00
Interest	.....	.....	.....	Cr. 48,527 06	Cr. 20,629 53	Cr. 69,156 59
Unclaimed Vouchers	.....	.....	.....	.....	Cr. 147 00	Cr. 147 00
Unclaimed Wages	.....	.....	.....	Cr. 6,246 72	.....	Cr. 6,246 72
Total to Profit and Loss	593,076 12	532,033 31	262,634 19	283,795 68	230,948 34	3,953,909 40
Paid Treasurer of Ontario	515,000 00	510,000 00	250,000 00	225,000 00	225,000 00	3,538,245 16
Balance Profit and Loss	78,076 12	22,033 31	12,634 19	58,795 68	5,948 34	415,664 24

TEMISKAMING AND NORTHERN

Comparative Statement of Earnings and Expenditures

No.	RECEIPTS.	Per Cent.	1913 November	Per Cent.	1914 November
	I. Revenue from transportation:		$ c.		$ c.
1	Freight Revenue		77,953 83		71,316 58
2	Passenger revenue		41,979 86		36,977 81
3	Excess baggage revenue		757 85		497 53
4	Parlor and chair car revenue		101 80		82 00
5	Mail revenue		1,428 40		1,787 98
6	Express revenue		3,274 07		3,560 57
7	Milk revenue (on passenger trains)				80
8	Other passenger train revenue				
9	Switching revenue		505 97		151 00
10	Special service train revenue		10 00		
11	Miscellaneous transportation revenue				
	Total		126,011 78		114,354 27
	II. Revenue from operations other than transportation:				
12	Station and train privileges		329 16		362 49
13	Parcel room receipts				
14	Storage—freight		70 97		75 68
15	Storage—baggage		62 35		50 60
16	Car service—demurrage		469 35		678 00
17	Telegraph and telephone		2,394 39		2,267 34
18	Rents of buildings and other property		1,101 77		1,534 64
19	Miscellaneous		195 77		23 64
	Total		4,623 76		5,992 39
	Total revenue		130,635 54		120,346 66
	EXPENDITURES.				
1	Maintenance of way and structure	25.4	33,346 87	22.	26,491 06
2	Maintenance of equipment	14.8	19,267 83	16.3	19,564 97
3	Traffic expenses	1.3	1,698 90	1.2	1,501 47
4	Transportation expenses	43.3	56,298 31	46.2	55,534 73
5	General expenses	7.5	9,790 03	6.6	7,988 31
	Total operating expenses	92.3	120,401 94	92.3	111,080 54
	Balance		10,233 60		9,266 12
	Other income:				
	Ore royalties				
	Outside operations				247 60
	Hire of equipment				
	Rent from joint facilities				25 00
	Rent from lease of road				837 92
	Miscellaneous income				
	Totals		10,233 60		10,376 64
	Deductions from income:				
	Hire of equipment		1,800 98		232 81
	Outside operations		10 25		1,085 89
	Rent for joint facilities				
	Net result		8,422 37		9,057 94

ONTARIO RAILWAY

by Months November, 1913, to October, 1915

Per Cent.	1913 December	Per Cent.	1914 December	Per Cent.	1914 January	Per Cent.	1915 January	No.
	$ c.		$ c.		$ c.		$ c.	
.....	77,641 80	.....	78,370 76	.....	72,860 49	.....	87,841 30	1
.....	45,569 33	.....	37,323 71	.....	34,328 04	.....	30,755 22	2
.....	329 56	.....	209 28	.....	526 86	.....	315 85	3
.....	106 40	.....	85 10	.....	118 40	.....	85 30	4
.....	1,428 38	.....	2,029 86	.....	1,656 98	.....	1,938 04	5
.....	3,877 10	.....	3,609 54	.....	3,734 23	.....	3,191 72	6
.....	.....	.....	18 61	.....	.....	.....	50 85	7
.....	.....	.....	.....	.....	.....	.....	.....	8
.....	848 98	.....	379 43	.....	615 11	.....	257 81	9
.....	322 50	.....	.....	.....	.....	.....	.....	10
.....	.....	.....	.....	.....	.....	.....	.....	11
.....	130,124 05	.....	122,026 29	.....	113,840 11	.....	124,436 09	
.....	329.16	.....	362.49	.....	362 49	.....	362 49	12
.....	.....	.....	.....	.....	.....	.....	.....	13
.....	89 21	.....	80 42	.....	66 33	.....	126 65	14
.....	58 10	.....	28 75	.....	57 75	.....	33 05	15
.....	966 00	.....	1,224 00	.....	1,721 00	.....	1,206 00	16
.....	2,644 65	.....	3,166 79	.....	2,635 40	.....	2,709 87	17
.....	755 34	.....	545 47	.....	5,578 47	.....	506 34	18
.....	252 08	.....	Dr. 3 77	.....	192 15	.....	59 69	19
.....	5,094 54	.....	5,404 15	.....	10,612 59	.....	5,004 09	
.....	135,218 59	.....	127,430 44	.....	124,452 70	.....	129,440 18	
27.5	37,221 50	24.2	30,870 60	15.	18,684 59	16.4	21,147 57	1
18.1	24,430 22	20.1	25,632 17	15.7	19,557 23	20.5	26,539 04	2
1.2	1,661 49	1.5	1,850 47	1.3	1,668 49	1.4	1,844 50	3
42.9	57,982 05	46.4	59,073 20	47.4	58,963 37	47.2	61,223 53	4
6.8	9,188 88	7.2	9,201 47	7.2	8,944 80	6.7	8,617 89	5
96.5	130,484 14	99.4	126,627 91	86.6	107,818 48	92.2	119,372 53	
.....	4,734 45	.....	802 53	.....	16,634 22	.....	10,067.65	
.....	.....	.....	10,692 53	.....	.....	.....	Dr. 396 12	
.....	712 90	.....	.....	.....	76 64	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	25 00	.....	.....	.....	3,084 53	
.....	.....	.....	837 92	.....	.....	.....	1,586 08	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	5,447 35	.....	12,357 98	.....	16,710 86	.....	14,342 14	
.....	321 61	.....	4,745 77	.....	3,508 45	.....	6,219 40	
.....	.....	.....	2,390 01	.....	.....	.....	2,074 82	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	5,125 74	.....	5,222 20	.....	13,202 41	.....	6,047 92	

Comparative Statement of Earnings and Expenditures by

No.	RECEIPTS.	Per Cent.	1914 February	Per Cent.	1915 February	Per Cent.	1914 March
	I. Revenue from transportation:		$ c.		$ c.		$ c.
1	Freight revenue		73,947 15		81,894 86		105,622 23
2	Passenger revenue		28,593 15		26,244 94		39,727 32
3	Excess baggage revenue		462 30		395 33		486 61
4	Parlor and chair car revenue		109 50		76 10		122 05
5	Mail revenue		1,492 75		1,788 96		1,611 61
6	Express revenue		2,536 96		2,532 93		2,686 52
7	Milk revenue (on passenger trains)				34 79		
8	Other passenger train revenue						
9	Switching revenue		451 34		304 34		492 60
10	Special service train revenue						63 12
11	Miscellaneous transportation revenue						
	Total		107,593 15		113,272 25		150,812 06
	II. Revenue from operations other than transportation:						
12	Station and train privileges		362 57		362 49		362 49
13	Parcel room receipts						
14	Storage—freight		144 67		171 19		87 25
15	Storage—baggage		40 75		22 35		37 05
16	Car service—demurrage		1,086 90		711 00		1,107 40
17	Telegraph and telephone		2,568 68		3,044 28		3,083 03
18	Rents of buildings and other property		2,938 29		2,073 07		1,111 05
19	Miscellaneous		301.35		1 00		110 35
	Total		7,443 21		6,385 38		5,898.62
	Total revenue		115,036 36		119,657 63		156,710 68
	EXPENDITURES.						
1	Maintenance of way and structures	20.2	23,239 09	15.6	18,633 35	13.8	21,554 55
2	Maintenance of equipment	21.4	24,684 77	19.3	23,096 23	15.9	24,984 56
3	Traffic expenses	1.1	1,236 81	1.	1,239 17	.9	1,449 91
4	Transportation expenses	52.9	60,846 37	49.2	58,863 41	39.3	61,606 99
5	General expenses	7.2	8,290 92	6.8	8,099 86	5.5	8,613 07
	Total operating expenses	102.8	118,297 96	91.9	109,932 02	75.4	118,209 08
	Balance	Dr.	3,261 60		9,725 61		38,501 60
	Other income:						
	Ore royalties		7,249 54		Dr. 356 63		22,303 58
	Outside operations						
	Hire of equipment						
	Rent from joint facilities				25 00		
	Rent from lease of road				759 44		
	Miscellaneous income						
	Total		3,987 94		10,153 42		60,805 18
	Deductions from income:						
	Hire of equipment		2,490 52		4,532 33		3,405 56
	Outside operations		4 73		2,192 42		26 22
	Rent of joint facilities						
	Net result		1,492 69		3,428 67		57,373 40

Months, November, 1913, to October, 1915—Continued

Per Cent.	1915 March	Per Cent.	1914 April	Per Cent.	1915 April	Per Cent.	1914 May	No.
	$ c.		$ c.		$ c.		$ c.	
.....	86,006 71	.....	89,273 67	.....	59,580 13	.....	78,003 88	1
.....	34,909 20	.....	50,035 31	.....	36,630 78	.....	52,647 86	2
.....	288 57	.....	453 17	.....	495 57	.....	673 72	3
.....	81 45	.....	111 45	.....	97 70	.....	126 30	4
.....	1,938 15	.....	1,617 15	.....	1,938 04	.....	1,617 15	5
.....	2,771 29	.....	3,129 98	.....	2,977 82	.....	3,578 10	6
.....	23 09	.....	.....	.....	10 67	.....	12 20	7
.....	.....	.....	.....	.....	.....	.....	.....	8
.....	468 98	.....	393 74	.....	459 34	.....	588 17	9
.....	.....	.....	148 75	.....	.....	.....	648 75	10
.....	.....	.....	.....	.....	.....	.....	.....	11
.....	126,487 44	.....	145,164 22	.....	102,190 05	.....	137,896 13	
.....	362 49	.....	362 49	.....	362 49	.....	362 50	12
.....	.....	.....	.....	.....	.....	.....	.....	13
.....	103 28	.....	42 79	.....	74 12	.....	61 79	14
.....	18 50	.....	72 75	.....	36 65	.....	45 90	15
.....	885 75	.....	709 00	.....	517 00	.....	854 00	16
.....	4,502 60	.....	4,581 60	.....	3,299 94	.....	4,272 54	17
.....	177 96	.....	5,190 18	.....	729 72	.....	439 97	18
.....	Dr. 75 52	.....	136 24	.....	16 71	.....	904 09	19
.....	5,975 06	.....	11,095 05	.....	5,036 63	.....	6,940 79	
.....	132,462 50	.....	156,259 27	.....	107,226 68	.....	144,836 92	
23.7	31,418 29	13.4	20,982 08	27.3	29,226 46	23.3	33,694 74	1
21.2	28,009 46	20.9	32,663 00	23.8	25,541 44	17.3	25,115 91	2
1.2	1,597 01	.9	1,387 00	1.3	1,425 13	1.8	2,588 44	3
41.	54,356 66	28.8	44,996 71	43.5	46,647 59	38.6	55,905 59	4
6.9	9,113 20	5.6	8,803 14	7.5	8,031 04	5.7	8,293 95	5
94.0	124,494 62	69.6	108,831 93	103.4	110,871 66	86.7	125,598 63	
.....	7,967 88	.....	47,427 34	.....	Dr. 3,644 98	.....	19,238 29	
.....	10,877 47	.....	Dr. 357 94	.....	Dr. 357 69	.....	.....	
.....	.....	.....	.....	.....	Dr. 247 60	.....	.....	
.....	.....	.....	.....	.....	.....	.....	467 95	
.....	25 00	.....	.....	.....	3,837 23	.....	.....	
.....	749 46	.....	.....	.....	804 47	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	19,619 81	.....	47,069 40	.....	391 43	.....	19,706 24	
.....	4,177 89	.....	3,040 01	.....	1,992 03	.....	.....	
.....	3,582 61	.....	1,644 29	.....	2,414 27	.....	2,267 74	
.....	304 50	.....	.....	.....	302 00	.....	.....	
.....	11,554 91	.....	42,385 10	.....	Dr. 4,316 87	.....	17,438 50	

Comparative Statement of Earnings and Expenditures by

No.	RECEIPTS.	Per Cent.	1915 May	Per Cent.	1914 June	Per Cent.	1915 June
	I. Revenue from transportation:		$ c.		$ c.		$ c.
1	Freight revenue		60,480 32		83,820 50		68,193 68
2	Passenger revenue		38,875 85		52,029 50		38,600 15
3	Excess baggage revenue		438 93		543 03		430 75
4	Parlor and chair car revenue		103 40		101 10		88 20
5	Mail revenue		1,950 36		1,640 79		1,952 60
6	Express revenue		3,004 22		3,960 19		3,561 14
7	Milk revenue (on passenger trains)		1 32				88
8	Other passenger train revenue						
9	Switching revenue		243 81		1,698 93		449 07
10	Special service train revenue				1,744 25		
11	Miscellaneous transportation revenue						
	Total		105,098 21		145,538 29		113,276 47
	II. Revenue from operations other than transportation:						
12	Station and train privileges		362 49		362 50		362 49
13	Parcel room receipts						
14	Storage—freight		78 50		132 62		104 03
15	Storage—baggage		34 10		67 35		28 40
16	Car service—demurrage		455 00		474 00		695 00
17	Telegraph and telephone		3,463 94		4,598 93		3,679 77
18	Rents of buildings and other property		451 91		1,519 17		789 60
19	Miscellaneous		33 76		113 83		3 85
	Total		4,879 70		7,268 40		5,663 14
	Total revenue		109,977 91		152,806 69		118,939 61
	EXPENDITURES.						
1	Maintenance of way and structures	32.8	36,105 19	32.9	50,252 22	28.1	33,392 07
2	Maintenance of equipment	15.9	17,465 91	16.1	24,543 43	15.5	18,444 58
3	Traffic expenses	1.2	1,309 54	.8	1,254 70	1.2	1,473 75
4	Transportation expenses	37.9	41,638 28	35.2	53,875 37	36.	42,853 71
5	General expenses	7.3	8,017 47	6.3	9,660 40	5.3	6,232 96
	Total operating expense	95.1	104,536 39	91.3	139,586 12	86.1	102,397 07
	Balance		5,441 52		13,220 57		16,542 54
	Other income:						
	Ore royalties		Dr. 365 14				Dr. 355 81
	Outside operations						
	Hire of equipment						
	Rent from lease of road		1,728 66				987 78
	Rent from joint facilities		1,242 54				1,118 12
	Miscellaneous income						187 00
	Total		8,047 58		13,220 57		18,479 63
	Deductions from income:						
	Hire of equipment		750,00		109 97		670 21
	Outside operations		2,340 88		2,343 73		2,569 77
	Rent for joint facilities		1,515 00				302 00
	Net result		3,441 70		10,766 87		14,937 65

Months, November, 1913, to October, 1915—Continued

Per Cent.	1914 July	Per Cent.	1915 July	Per Cent.	1914 August	Per Cent.	1915 August	No.
	$ c.		$ c.		$ c.		$ c.	
.....	79,821 77	.....	68,894 21	.....	74,232 75	.....	74,282 67	1
.....	54,544 37	.....	43,895 52	.....	53,457 76	.....	63,734 68	2
.....	503 00	.....	323 49	.....	471 46	.....	321 03	3
.....	158 95	.....	84 55	.....	168 90	.....	84 25	4
.....	1,943 16	.....	2,027 70	.....	1,886 04	.....	1,952 60	5
.....	4,672 83	.....	3,971 90	.....	4,115 53	.....	4,520 77	6
.....	.....	.....	2 80	.....	12 00	.....	2 45	7
.....	.....	.....	.....	.....	.....	.....	.....	8
.....	1,420 08	.....	301 15	.....	.....	.....	438 50	9
.....	777 60	.....	.....	.....	413 73	.....	.....	10
.....	.....	.....	.....	.....	.....	.....	.....	11
.....	143,841 76	.....	119,501 32	.....	134,758 17	.....	145,336 95	
.....	362 50	.....	452 49	.....	362 50	.....	272 49	12
.....	.....	.....	.....	.....	.....	.....	.....	13
.....	41 93	.....	134 53	.....	55 05	.....	86 37	14
.....	48 60	.....	33 70	.....	47 35	.....	25 15	15
.....	486 00	.....	568 00	.....	621 00	.....	407 00	16
.....	3,661 41	.....	3,667 55	.....	4,280 25	.....	3,555 38	17
.....	1,074 56	.....	360 89	.....	5,130 37	.....	1,197 33	18
.....	24 02	.....	19 30	.....	18 47	.....	35 99	19
.....	5,699 02	.....	5,236 46	.....	10,514 99	.....	5,579 71	
.....	149,540 78	.....	124,737 78	.....	145,273 16	.....	150,916 66	
35.3	52,786 60	29.2	36,455 93	29.6	43,033 17	22.3	33,596 53	1
15.6	23,388 11	17.5	21,776 65	16.7	24,152 58	15.7	23,619 74	2
1.1	1,667 45	1.2	1,499 45	1.	1,541 56	1.1	1,624 02	3
35.4	52,994 16	37.6	46,880 50	36.2	52,573 37	33.9	51,220 33	4
5.3	7,903 00	6.3	7,857 24	5.8	8,481 06	4.9	7,448 62	5
92.7	138,739 32	91.8	114,469 77	89.3	129,781 74	77.9	117,509 24	
.....	10,801 46	.....	10,268 01	.....	15,491 42	.....	33,407 42	
.....	12,530 95	.....	Dr. 364 58	.....	.....	.....	Dr. 363 02	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	138 84	.....	.....	.....	.....	.....	.....	
.....	.....	.....	984 27	.....	.....	.....	979 53	
.....	.....	.....	1,154 74	.....	.....	.....	1,064 73	
.....	.....	.....	683 28	.....	.....	.....	679,56	
.....	23,471 25	.....	12,725 72	.....	15,491 42	.....	35,768 22	
.....	.....	.....	1,085 97	.....	1,464 21	.....	5,933 62	
.....	2,294 58	.....	2,392 97	.....	2,454 42	.....	2,515 73	
.....	.....	.....	312 50	.....	.....	.....	323 00	
.....	21,176 67	.....	8,934 28	.....	11,572 79	.....	26,995 87	

Comparative Statement of Earnings and Expenditures by

No.	RECEIPTS.	Per Cent.	1914 September	Per Cent.	1915 September	Per Cent.	1914 October
	I. Revenue from transportation:		$ c.		$ c.		$ c.
1	Freight revenue		63,823 53		90,650 44		75,088 75
2	Passenger revenue		47,536 72		46,901 47		44,369 86
3	Excess baggage revenue		529 26		630 49		704 14
4	Parlor and chair car revenue		134 90		81 90		116 00
5	Mail revenue		2,391 48		1,952 60		1,773 68
6	Express revenue		3,981 89		4,687 32		3,399 19
7	Milk revenue (on passenger trains)		26 25		2 40		15 70
8	Other passenger train revenue						
9	Switching revenue		159 82		620 60		388 64
10	Special service train revenue						648 75
11	Miscellaneous transportation revenue						
	Total		118,583 85		145,527 22		126,504 71
	II. Revenue from operations other than transportation:						
12	Station and train privileges		362 50		362 49		362 50
13	Parcel room receipts						
14	Storage—freight		102 35		93 05		118 54
15	Storage—baggage		48 65		22 30		45 15
16	Car service—demurrage		688 00		610 00		472 00
17	Telegraph and telephone		2,896 45		4,271 56		3,448 35
18	Rents of buildings and other property		1,489 02		543 86		4,946 51
19	Miscellaneous		42 16		1 37		17 44
	Total		5,629 13		5,904 63		9,410 49
	Total revenue		124,212 98		151,431 85		135,915 20
	EXPENDITURES.						
1	Maintenance of way and structures	35.9	44,563 11	11.8	17,809 39	21.1	28,687 63
2	Maintenance of equipment	19.1	23,733 22	10.8	16,329 96	13.6	18,415 01
3	Traffic expenses	1.	1,210 56	.9	1,405 16	1.1	1,507 34
4	Transportation expenses	40.7	50,611 76	33.6	50,864 06	33.1	45,033 15
5	General expenses	7.5	9,285 51	5.5	8,387 58	5.7	7,777 60
	Total operating expenses	104.2	129,404 16	62.6	94,796 15	74.6	101,420 73
	Balance		Dr.5,191 18		56,635 70		34,494 47
	Other income:						
	Ore royalties		6,533 68		Dr. 371 63		7,614 64
	Outside operations						
	Hire of equipment		1,122 31				175 20
	Rent from joint facilities				834 52		
	Rent from lease of road				1,088 95		
	Miscellaneous income				669 68		
	Total		2,464 81		58,857 22		42,284 31
	Deductions from income:						
	Hire of equipment				4,345 06		
	Outside operations		2,316 29		2,475 19		2,412 14
	Rent of joint facilities				315 50		
	Net result		148 52		51,721 47		39,872 17

Months, November, 1913, to October, 1915—Continued.

Per Cent.	1915 October	Per Cent.	1914 Total	Per Cent.	1915 Total	Increase	Decrease	No.
	$ c.		$ c.		$ c.	$ c.	$ c.	
.....	98,310 23	.....	952,090 35	.....	925,735 37	.....	26,354 98	1
.....	47,500 47	.....	544,820 08	.....	482,349 80	.....	62,470 28	2
.....	596 00	.....	6,440 96	.....	4,942 82	.....	1,498 14	3
.....	72 55	.....	1,475 75	.....	1,022 50	.....	453 25	4
.....	1,952 60	.....	20,487 57	.....	23,209 49	2,721 92	.....	5
.....	4,530 33	.....	42,946 59	.....	42,919 55	.....	27 04	6
.....	1 18	.....	66 15	.....	149 84	83 69	.....	7
.....	.....	.....	.....	.....	.....	.....	.....	8
.....	696 62	.....	7,563 38	.....	4,750 65	.....	2,812 73	9
.....	.....	.....	4,777 45	.....	.....	.....	4,777 45	10
.....	.....	.....	.....	.....	.....	.....	.....	11
.....	153,659 98	.....	1,580,668 28	.....	1,485,080 02	.....	95,588 26	
.....	362 49	.....	4,283 36	.....	4,349 88	66 52	.....	12
.....	.....	.....	.....	.....	.....	.....	.....	13
.....	70 55	.....	1,012 50	.....	1,198 37	185 87	.....	14
.....	22 20	.....	631 75	.....	355 75	.....	276 00	15
.....	451 00	.....	9,654 65	.....	8,407 75	.....	1,246 90	16
.....	3,857 58	.....	41,065 68	.....	42,486 60	1,420 92	.....	17
.....	528 32	.....	31,274 70	.....	9,439 11	.....	21,835 59	18
.....	31 75	.....	2,307 95	.....	234 29	.....	2,073 66	19
.....	5,323 89	.....	90,230 59	.....	66,471 75	.....	23,758 84	
.....	158,983 87	.....	1,670,898 87	.....	1,551,551 77	.....	119,347 10	
6.7	10,719 42	24.4	408,046 15	21.	325,865 86	.....	82,180 29	1
10.4	16,634 36	17.	284,935 87	16.9	262,654 51	.....	22,281 36	2
.9	1,365 46	1.1	18,872 65	1.2	18,135 13	.....	737 52	3
35.7	56,755 92	39.	651,687 20	40.3	625,911 92	.....	25,775 28	4
4.4	6,933 85	6.3	105,032 36	6.2	95,929 49	.....	9,102 87	5
58.1	92,409 01	87.8	1,468,574 23	85.6	1,328,496 91	.....	140,077 32	
.....	66,574 86	.....	202,324 64	.....	223,054 86	20,730 22	.....	
.....	7,629 36	.....	55,874 45	.....	26,268 74	.....	29,605 71	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	1,904 30	.....	.....	.....	1,904 30	
.....	5,511 32	.....	.....	.....	16,601 37	16,601 37	.....	
.....	1,124 42	.....	.....	.....	13,815 26	13,815 26	.....	
.....	638 46	.....	.....	.....	2,857 98	2,857 98	.....	
.....	81,478 42	.....	260,103 39	.....	282,598 21	22,494 82	.....	
.....	4,983 59	.....	16,141 31	.....	39,668 68	23,527 37	.....	
.....	2,666 94	.....	14,984 85	.....	28,701 40	13,716 55	.....	
.....	315 00	.....	.....	.....	3,689 50	3,689 50	.....	
.....	73,512 89	.....	228,977 23	.....	210,538 63	.....	18,438 60	

Comparative Statement of Earnings and Expenditures by

No.	Maintenance of Way and Structures	1913 November.	1914 November.	1913 December.	1914 December.
		$ c.	$ c.	$ c.	$ c.
1	Superintendence	2,006 25	2,335 20	2,635 20	2,150 17
2	Ballast	107 11	Cr. 167 32	270 05	41 22
3	Ties	300 58	519 11	1,051 74	118 81
4	Rails	1,417 99	941 95	864 41	1,089 15
5	Other Track Material	1,189 86	1,034 13	1,763 88	1,417 08
6	Roadway and Track	20,033 15	15,243 37	12,809 52	12,869 28
7	Removal of Snow, Sand and Ice	701 21	1,250 41	2,152 02	2,089 20
8	Tunnels				
9	Bridges, Trestles and Culverts	1,567 67	1,571 14	9,532 14	8,314 14
10	Over and Under Grade Crossings				
11	Grade Crossings, Fences, Cattle Guards and Signs	562 73	369 80	262 61	53 13
12	Snow and Sand Fences and Snowsheds				
13	Signals and Interlocking Plants	1 82	3 48		
14	Telegraph and Telephone Lines	1,085 24	218 52	776 88	306 01
15	Electric Power Transmission				
16	Buildings, Fixtures and Grounds	5,013 38	2,820 81	5,458 54	1,925 03
17	Docks and Wharves				
18	Roadway Tools and Supplies	252 24	328 90	364 31	514 56
19	Injuries to Persons			50 00	75 00
20	Stationery and Printing	93 35	36 89	52 53	95 05
21	Other Expenses				
22	Maintaining Joint Tracks, Yards, and other Facilities—Dr.		118 00		108 00
23	Maintaining Joint Tracks, Yards, and other Facilities—Cr.	985 71	133 33	822 33	295 23
	Totals	33,346 87	26,491 06	37,221 50	30,870 60
	Maintenance of Equipment.				
24	Superintendence	647 36	689 41	741 83	754 02
25	Steam Locomotives—Repairs	7,547 33	6,777 54	7,619 65	10,239 59
26	" " Renewals				
27	" " Depreciation	1,249 63	1,237 13	1,249 63	1,237 13
28	Electric Locomotives—Repairs				
29	" " Renewals				
30	" " Depreciation				
31	Passenger Train Cars—Repairs	4,253 11	4,355 17	5,354 68	4,309 90
32	" " " Renewals			321 62	
33	" " " Depreciation	751 03	1,170 07	751 03	1,170 07
34	Freight Train Cars—Repairs	1,718 29	411 83	3,951 10	2,144 40
35	" " " Renewals			1,474 18	
36	" " " Depreciation	1,060 59	1,027 28	1,060 59	1,027 28
37	Electric Equipment of Cars—Repairs,				
38	" " " Renewals				
39	" " " Depreciation				
40	Floating Equipment—Repairs				
41	" " Renewals				
42	" " Depreciation				
43	Work Equipment—Repairs	1,168 17	3,285 23	798 41	3,745 79
44	" " Renewals				
45	" " Depreciation	278 12	278 12	278 12	278 12
46	Shop Machinery and Tools	387 60	255 08	541 67	620 30
47	Power Plant Equipment				
48	Injuries to Persons		86	50 00	76 68
49	Stationery and Printing	29 99	82 52	88 99	56 39
50	Other Expenses	176 61	Cr. 5 27	148 72	Cr. 7 50
51	Maintaining Joint Equipment at Terminals—Dr.				
52	Maintaining Joint Equipment at Terminals—Cr.				
	Totals	19,267 83	19,564 97	24,430 22	25,632 17

Months, November, 1913, to October, 1915---Continued.

1914 January.	1915 January.	1914 February.	1915 February.	1914 March.	1915 March.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
2,084 51	1,806 62	2,498 48	1,806 43	2,244 89	1,894 58	1
.....	.....	Cr. 2 20	6 36	8 35	1,500 00	2
.....	48 90	.....	.....	.....	4,435 26	3
216 71	175 97	97 50	228 16	Cr. 198 75	1,957 81	4
913 78	1,159 21	805 21	764 41	1,586 51	1,234 42	5
4,935 43	9,300 08	7,050 61	8,769 85	10,027 93	14,150 64	6
5,498 83	5,066 13	7,748 19	4,445 25	1,971 79	1,797 25	7
.....	.....	.....	.....	.....	.....	8
2,662 66	915 41	1,975 14	1,031 58	4,792 94	2,192 10	9
.....	.....	.....	.....	.....	.....	10
40 57	75 06	244 47	8 34	47 21	144 38	11
.....	.....	.....	.....	.....	.....	12
2 90	20 42	.....	3 34	.....	7 48	13
842 72	247 26	768 40	228 01	686 08	293 57	14
.....	.....	.....	.....	.....	.....	15
2,245 18	2,129 67	2,181 01	1,176 79	1,193 95	1,462 56	16
.....	.....	.....	.....	.....	.....	17
487 35	437 61	639 36	449 33	420 98	475 06	18
.....	.....	.....	.....	.....	.....	19
59 57	102 13	126 27	45 56	64 37	104 37	20
.....	.....	.....	.....	.....	.....	21
.....	104 00	.....	96 00	.....	[illegible]	22
1,305 62	440 90	893 35	426 06	1,291 70	435 69	23
18,684 59	21,147 57	23,239 09	18,633 35	21,554 55	31,418 29	
757 02	856 11	816 18	857 99	623 85	862 50	24
7,574 94	10,733 76	7,906 83	7,284 68	7,530 31	11,068 76	25
.....	.....	.....	.....	.....	.....	26
1,249 63	1,237 13	1,249 63	1,237 13	1,249 63	1,237 13	27
.....	.....	.....	.....	.....	.....	28
.....	.....	.....	.....	.....	.....	29
.....	.....	.....	.....	.....	.....	30
4,842 24	4,297 35	5,021 42	7,386 85	5,283 76	2,435 64	31
.....	.....	321 62	.....	402 02	.....	32
751 03	1,170 07	751 03	1,170 07	751 03	1,170 07	33
1,549 38	3,002 91	3,347 62	2,487 55	3,746 94	2,378 20	34
.....	.....	1,859 35	.....	2,276 84	.....	35
1,060 59	1,027 28	1,060 59	1,027 28	1,060 59	1,027 28	36
.....	.....	.....	.....	.....	.....	37
.....	.....	.....	.....	.....	.....	38
.....	.....	.....	.....	.....	.....	39
.....	.....	.....	.....	.....	.....	40
.....	.....	.....	.....	.....	.....	41
.....	.....	.....	.....	.....	.....	42
820 65	3,351 76	1,468 75	916 97	1,259 34	7,268 55	43
.....	.....	.....	.....	.....	.....	44
278 12	278 12	278 12	278 12	278 12	278 12	45
557 88	562 87	322 84	375 93	370 62	436 81	46
.....	.....	.....	.....	.....	.....	47
.....	17	.....	.....	.....	.....	48
53 01	80 51	93 20	82 36	105 24	107 51	49
62 74	Cr. 59 00	187 59	Cr. 8 70	46 27	80 47	50
.....	.....	.....	.....	.....	.....	51
.....	.....	.....	.....	.....	341 58	52
19,557 23	26,539 04	24,684 77	23,096 23	24,984 56	28,009 46	

Comparative Statement of Earnings and Expenditures by

No.	Maintenance of Way and Structures.	1914 April.	1915 April.	1914 May.	1915 May.
		$ c.	$ c.	$ c.	$ c.
1	Superintendence	1,952 61	1,980 24	2,378 28	2,017 48
2	Ballast	77 82	1,501 89	85 54	1,513 05
3	Ties	272 85	4,431 03	6,242 12	4,633 69
4	Rails	29 86	1,695 36	2,242 29	3,188 90
5	Other Track Material	1,064 62	613 61	1,057 55	97 58
6	Roadway and Track	12,313 89	13,164 49	16,661 70	15,748 41
7	Removal of Snow, Sand and Ice	223 89	194 04	.....	15 92
8	Tunnels	.....	.....	.....	.....
9	Bridges, Trestles and Culverts	1,717 76	2,333 39	611 71	3,529 15
10	Over and Under Grade Crossings	5 84	.....	.....	.....
11	Grade Crossings, Fences, Cattle Guards and Signs	344 99	363 35	511 19	547 91
12	Snow and Sand Fences and Snowsheds	.....	.....	.....	.....
13	Signals and Interlocking Plants	1 57	.....	82	37 50
14	Telegraph and Telephone Lines	222 48	249 95	404 31	203 60
15	Electric Power Transmission	.....	.....	.....	.....
16	Buildings, Fixtures and Grounds	2,829 54	2,325 41	3,683 25	3,922 60
17	Docks and Wharves	.....	.....	.....	.....
18	Roadway Tools and Supplies	573 52	550 19	421 55	572 01
19	Injuries to Persons	.....	.....	.....	.....
20	Stationery and Printing	85 57	51 05	186 70	48 28
21	Other Expenses	.....	.....	.....	.....
22	Maintaining Joint Tracks, Yards, and other facilities—Dr.	.....	202 00	.....	589 00
23	Maintaining Joint Tracks, Yards, and other facilities—Cr.	734 73	429 54	792 27	559 89
	Totals	20,982 08	29,226 46	33,694 74	36,105 19
	Maintenance of Equipment.				
24	Superintendence	509 66	811 45	751 17	860 03
25	Steam Locomotives—Repairs	6,401 70	9,084 93	6,321 35	4,913 44
26	" " Renewals	8,391 12	.....	.....	.....
27	" " Depreciation	1,249 63	1,237 13	1,221 74	1,237 13
28	Electric Locomotives—Repairs	.....	.....	.....	.....
29	" " Renewals	.....	.....	.....	.....
30	" " Depreciation	.....	.....	.....	.....
31	Passenger Train Cars—Repairs	4,721 49	3,714 13	5,880 51	3,526 29
32	" " " Renewals	402 02	.....	402 02	.....
33	" " " Depreciation	751 03	1,170 07	751 03	1,170 07
34	Freight Train Cars—Repairs	2,571 59	1,405 86	3,229 78	738 73
35	" " " Renewals	2,276 84	.....	2,276 84	.....
36	" " " Depreciation	1,060 59	1,027 28	1,060 59	1,027 28
37	Electric Equipment of Cars—Repairs	.....	.....	.....	.....
38	" " " Renewals	.....	.....	.....	.....
39	" " " Depreciation	.....	.....	.....	.....
40	Floating Equipment—Repairs	.....	.....	.....	.....
41	" " Renewals	.....	.....	.....	.....
42	" " Depreciation	.....	.....	.....	.....
43	Work Equipment—Repairs	3,280 25	6,757 87	2,367 18	3,646 68
44	" " Renewals	.....	.....	.....	.....
45	" " Depreciation	278 12	278 12	278 12	278 12
46	Shop Machinery and Tools	553 59	319 67	403 05	248 49
47	Power Plant Equipment	.....	.....	.....	.....
48	Injuries to Persons	1 62	17	16	.....
49	Stationery and Printing	101 63	55 18	62 66	61 19
50	Other Expenses	112 12	.....	109 71	.....
51	Maintaining Joint Equipment at Terminals—Dr.	.....	.....	.....	.....
52	Maintaining Joint Equipment at Terminals—Cr.	.....	320 42	.....	241 54
	Totals	32,663 00	25,541 44	25,115 91	17,465 91

Months, November, 1913, to October, 1915—Continued.

1914 June.	1915 June.	1914 July.	1915 July.	1914 August.	1915 August.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
2,380 78	2,203 93	2,228 77	2,172 17	2,218 62	1,977 28	1
42 61	1,500 00	1,687 06	1,782 92	8,478 31	Cr. 645 10	2
10,810 77	4,629 47	5,141 70	4,470 52	4,839 58	3,126 92	3
7,534 95	1,517 86	6,419 06	1,557 98	583 80	1,424 64	4
447 18	433 06	657 24	212 76	748 76	511 35	5
22,675 95	16,731 74	25,456 04	18,614 79	23,502 56	19,334 84	6
.....	176 34	.....	.....	.....	.....	7
.....	.....	.....	.....	.....	.....	8
408 00	2,639 58	3,633 26	4,133 01	Cr. 2,119 32	3,202 39	9
.....	.....	.....	.....	.....	.....	10
406 33	550 62	1,444 62	352 18	858 90	1,166 50	11
.....	.....	.....	.....	.....	.....	12
.....	Cr. 10 00	82	1 45	.....	.....	13
424 91	235 91	645 50	269 22	594 39	298 19	14
.....	.....	.....	.....	.....	.....	15
5,068 41	2,692 15	5,696 33	2,832 76	3,644 86	2,920 74	16
.....	.....	.....	.....	.....	.....	17
713 39	229 99	833 34	304 60	413 02	352 09	18
.....	16 96	.....	7 11	.....	.....	19
93 92	51 43	52 84	34 87	66 22	18 16	20
.....	.....	.....	.....	.....	25 00	21
.....	202 00	.....	212 50	.....	223 00	22
754 98	408 97	1,109 98	502 91	796 53	339 47	23
50,252 22	33,392 07	52,786 60	36,455 93	43,033 17	33,596 53	
572 28	925 37	630 98	898 27	628 53	887 36	24
7,708 66	5,397 53	6,443 31	5,937 48	7,318 75	5,466 77	25
.....	.....	.....	.....	.....	.....	26
1,221 74	1,237 13	1,221 74	1,237 13	1,221 74	1,237 13	27
.....	.....	.....	.....	.....	.....	28
.....	.....	.....	.....	.....	.....	29
.....	.....	.....	.....	.....	.....	30
5,659 90	3,679 11	5,230 52	3,566 85	6,107 84	4,641 82	31
402 02	.....	402 02	.....	402 02	.....	32
751 03	1,170 07	751 03	1,170 07	751 03	1,170 07	33
2,540 71	716 64	4,015 43	2,012 87	2,879 06	1,624 12	34
2,276 84	.....	2,276 84	.....	2,276 84	.....	35
1,060 59	1,027 28	1,060 59	1,027 28	1,060 59	1,027 28	36
.....	.....	.....	.....	.....	.....	37
.....	.....	.....	.....	.....	.....	38
.....	.....	.....	.....	.....	.....	39
.....	.....	.....	.....	.....	.....	40
.....	.....	.....	.....	.....	.....	41
.....	.....	.....	.....	.....	.....	42
1,358 79	3,780 05	573 26	5,409 18	704 73	6,898 10	43
.....	.....	.....	.....	.....	.....	44
278 12	278 12	278 12	278 12	278 12	278 12	45
355 65	247 36	313 04	320 81	218 50	478 72	46
.....	.....	.....	.....	.....	.....	47
17	8 14	10 49	16 09	.....	.....	48
168 09	83 92	60 16	68 30	101 03	49 77	49
188 84	115 74	120 58	115 64	203 80	115 64	50
.....	.....	.....	.....	.....	.....	51
.....	221 88	.....	281 44	.....	255 16	52
24,543 43	18,444 58	23,388 11	21,776 65	24,152 58	23,619 74	

Comparative Statement of Earnings and Expenditures by

No.	Maintenance of Way and Structures.	1914 September.	1915 September.	1914 October.
		$ c.	$ c.	$ c.
1	Superintendence	2,232 60	2,032 21	1,894 19
2	Ballast	4,196 24	Cr. 657 13	519 67
3	Ties	3,303 16	4,279 07	2,738 15
4	Rails	101 36	Cr. 3,866 35	2,120 04
5	Other Track Material	428 98	Cr. 198 47	339 70
6	Roadway and Track	21,738 30	12,036 66	19,592 35
7	Removal of Snow, Sand and Ice			26 89
8	Tunnels			
9	Bridges, Trestles and Culverts	8,448 40	205 51	Cr. 3,088 21
10	Over and Under Grade Crossings			88 75
11	Grade Crossings, Fences, Cattle Guards and Signs	323 24	927 99	47 84
12	Snow and Sand Fences and Snowsheds			
13	Signals and Interlocking Plants			12
14	Telegraph and Telephone Lines	823 43	399 99	619 88
15	Electric Power Transmission			
16	Buildings, Fixtures and Grounds	3,566 44	2,206 23	4,359 00
17	Docks and Wharves			
18	Roadway, Tools and Supplies	249 53	391 77	514 06
19	Injuries to Persons		40 98	Cr. 20 00
20	Stationery and Printing	41 39	94 12	72 11
21	Other Expenses			3 30
22	Maintaining Joint Tracks, Yards, and other Facilities—Dr.		215 50	
23	Maintaining Joint Tracks, Yards, and other Facilities—Cr.	889 96	298 69	1,140 21
	Totals	44,563 11	17,809 39	28,687 63
	Maintenance of Equipment.			
24	Superintendence	713 10	876 07	479 23
25	Steam Locomotives—Repairs	7,357 32	5,618 64	5,881 21
26	" " Renewals			
27	" " Depreciation	1,221 74	1,237 13	1,221 74
28	Electric Locomotives—Repairs			
29	" " Renewals			
30	" " Depreciation			
31	Passenger Train Cars—Repairs	5,914 05	4,205 96	6,017 80
32	" " " Renewals	402 02		402 02
33	" " " Depreciation	751 03	1,170 07	751 03
34	Freight Train Cars—Repairs	2,147 85	749 39	408 54
35	" " " Renewals	2,276 84		2,276 84
36	" " " Depreciation	1,060 59	1,027 28	1,060 59
37	Electric Equipment of Cars—Repairs			
38	" " " Renewals			
39	" " " Depreciation			
40	Floating Equipment—Repairs			
41	" " Renewals			
42	" " Depreciation			
43	Work Equipment—Repairs	928 71	811 60	743 88
44	" " Renewals			
45	" " Depreciation	278 12	278 12	278 12
46	Shop Machinery and Tools	422 55	384 05	360 72
47	Power Plant Equipment			
48	Injuries to Persons	16	26 88	21
49	Stationery and Printing	58 38	88 34	90 82
50	Other Expenses	200 76	115 64	Cr. 1,557 74
51	Maintaining Joint Equipment at Terminals—Dr.			
52	Maintaining Joint Equipment at Terminals—Cr.		259 21	
	Totals	23,733 22	16,329 96	18,415 01

Months, November, 1913, to October, 1915—Continued.

1915 October.	1914 Total.	1915 Total.	Increase.	Decrease.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	
2,023 96	26,755 18	24,400 27	.....	2,354 91	1
Cr. 2,716 56	15,470 56	3,659 33	.....	11,811 23	2
Cr. 1,847 73	34,700 65	28,845 05	.....	5,855 60	3
Cr. 1,185 97	21,429 22	8,725 46	.....	12,703 76	4
711 49	11,003 27	7,990 63	.....	3,012 64	5
10,428 47	196,797 43	166,392 62	.....	30,404 81	6
Cr. 12 17	18,322 82	15,022 37	.....	3,300 45	7
.....	.....	.....	.....	.....	8
354 35	30,142 15	30,421 75	279 60	.....	9
.....	94 59	.....	.....	94 59	10
870 24	5,094 70	5,429 50	334 80	.....	11
.....	.....	.....	.....	.....	12
Cr. 2 43	8 05	61 24	53 19	.....	13
333 58	7,894 22	3,283 81	.....	4,610 41	14
.....	.....	.....	.....	.....	15
1,823 38	44,939 89	28,238 13	.....	16,701 76	16
.....	.....	.....	.....	.....	17
150 06	5,882 65	4,756 17	.....	1,126 48	18
.....	30 00	140 05	110 05	.....	19
26 76	994 84	708 67	.....	286 17	20
1 00	3 30	26 00	22 70	.....	21
215 00	.....	2,489 50	2,489 50	.....	22
454 01	11,517 37	4,724 69	.....	Cr. 6,792 68	23
10,719 42	408,046 15	325,865 86	.....	82,180 29	
907 46	7,871 19	10,166 04	2,294 85	.....	24
3,746 46	85,611 36	86,269 58	658 22	.....	25
.....	8,391 12	.....	.....	8,391 12	26
1,237 13	14,828 22	14,845 56	17 34	.....	27
.....	.....	.....	.....	.....	28
.....	.....	.....	.....	.....	29
.....	.....	.....	.....	.....	30
1,771 30	64,287 32	47,890 37	.....	16,396 95	31
.....	3,859 40	.....	.....	3,859 40	32
1,170 07	9,012 36	14,040 84	5,028 48	.....	33
Cr. 1,463 99	32,106 29	16,208 51	.....	15,897 78	34
.....	21,548 25	.....	.....	21,548 25	35
1,027 28	12,727 08	12,327 36	.....	399 72	36
.....	.....	.....	.....	.....	37
.....	.....	.....	.....	.....	38
.....	.....	.....	.....	.....	39
.....	.....	.....	.....	.....	40
.....	.....	.....	.....	.....	41
.....	.....	.....	.....	.....	42
7,786 77	15,472 12	53,658 55	38,186 43	.....	43
.....	.....	.....	.....	.....	44
278 12	3,337 44	3,337 44	.....	.....	45
291 30	4,807 71	4,541 39	.....	266 32	46
.....	.....	.....	.....	.....	47
15	62 81	129 14	66 33	.....	48
67 69	1,013 20	883 68	.....	129 52	49
115 64	.....	578 30	578 30	.....	50
.....	.....	.....	.....	.....	51
301 02	.....	2,222 25	Cr. 2,222 25	.....	52
16,634 36	284,935 87	262,654 51	.....	22,281 36	

Comparative Statement of Earnings and Expenditures by

No.	Traffic Expenses.	1913 November.	1914 November.	1913 December.	1914 December.
		$ c.	$ c.	$ c.	$ c.
53	Superintendence	768 99	794 47	856 63	876 33
54	Outside Agencies	243 75	10 36	56 88	56 54
55	Advertising	275 00	366 67	338 20	237 63
56	Traffic Associations	8 25	36 82	31 73	74 78
57	Fast Freight Lines				
58	Industrial and Immigration Bureaus.	333 32	143 00	127 35	130 20
59	Stationery and Printing	69 59	150 15	250 70	474 99
60	Other Expenses				
	Totals	1,698 90	1,501 47	1,661 49	1,850 47
	Transportation Expenses.				
61	Superintendence	1,033 79	1,142 84	1,084 18	1,415 73
62	Despatching Trains	1,080 00	1,003 73	1,106 08	1,105 29
63	Station Employees	10,765 54	10,816 69	10,609 40	10,172 59
64	Weighing and Car Service Associations	24 96		20 22	23 55
65	Coal and Ore Docks				
66	Station Supplies and Expenses	1,553 66	1,365 08	1,610 06	2,282 37
67	Yardmasters and their Clerks	933 74	940 00	1,014 97	950 85
68	Yard Conductors and Brakemen	2,486 96	1,586 53	2,837 00	1,864 04
69	Yard Switch and Signal Tenders	77 90	109 82	192 65	181 64
70	Yard Supplies and Expenses	67 21	72 71	81 09	71 72
71	Yard Enginemen	1,547 69	1,009 24	1,709 78	1,267 97
72	Engine-house Expenses—Yard	479 39	394 93	553 52	453 56
73	Fuel for Yard Locomotives	2,986 66	3,553 81	2,998 80	2,978 49
74	Water for Yard Locomotives	78 20	35 02	39 89	46 11
75	Lubricants for Yard Locomotives	43 13	33 32	49 63	37 95
76	Other Supplies for Yard Locomotives	25 22	16 89	36 92	18 93
77	Operating Joint Yards and Terminals —Dr.	646 67	500 00	641 82	500 00
78	Operating Joint Yards and Terminals —Cr.	5,928 64	5,059 21	5,745 32	4,858 71
79	Motormen				
80	Road Enginemen	5,572 07	6,268 99	5,829 33	6,620 33
81	Engine-house Expenses—Road	3,578 60	3,380 64	4,099 85	3,725 63
82	Fuel for Road Locomotives	16,769 39	14,240 49	17,006 37	16,146 27
83	Water for Road Locomotives	1,405 84	1,861 39	1,731 20	1,756 51
84	Lubricants for Road Locomotives	258 43	229 57	265 12	288 12
85	Other Supplies for Road Locomotives	98 96	99 70	110 98	106 56
86	Operating Power Plants				
87	Purchased Power				
88	Road Trainmen	6,123 89	7,709 92	6,380 73	7,959 40
89	Train Supplies and Expenses	2,025 14	2,921 66	1,622 14	2,001 94
90	Interlockers, Block and other Signals—Operations				
91	Crossing, Flagmen and Gatemen		1 05		Cr. 1 16
92	Drawbridge Operation				
93	Clearing Wrecks	232 67	24 21	66 18	
94	Telegraph and Telephone—Operation.	190 00		230 00	
95	Operating Floating Equipment				
96	Express Service				
97	Stationery and Printing	695 58	917 71	820 03	714 66
98	Other Expenses	96 81	25 85		19 85
99	Loss and Damage—Freight	393 89	265 82	824 18	484 58
100	Loss and Damage—Baggage	50 00	8 00		8 08
101	Damage to Property				528 35
102	Damage to Stock on Right-of-Way	40 00	25 00	25 00	50 00
103	Injuries to Persons	864 96	33 33	130 25	152 00
104	Operating Joint Tracks—Dr.				
105	Operating Joint Tracks—Cr.				
	Totals	56,298 31	55,534 73	57,982 05	59,073 20

Months, November, 1913, to October, 1915—Continued.

1914 January.	1915 January.	1914 February.	1915 February.	1914 March.	1915 March.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
946 16	844 13	881 11	856 79	797 39	887 96	53
27 29	5 02	15 62	1 04	107 37	23 78	54
385 47	308 00	90 50	36 01	236 40	93 19	55
22 32	56 22	8 03	14 61	8 34	86 06	56
						57
101 90	567 75	142 38	268 67	155 77	231 44	58
185 35	63 38	99 17	62 05	144 64	274 58	59
						60
1,668 49	1,844 50	1,236 81	1,239 17	1,449 91	1,597 01	
1,118 96	1,276 06	1,079 48	1,183 38	1,146 40	1,282 21	61
1,116 76	1,149 98	1,083 66	1,082 00	1,100 77	1,078 15	62
10,403 68	10,321 87	10,612 24	10,090 10	10,738 48	9,666 99	63
63 98	30 14	59 23	51 23		78 09	64
						65
1,591 26	2,021 97	1,923 00	1,696 26	1,856 88	1,854 76	66
1,046 09	894 26	926 06	954 83	920 00	1,001 66	67
2,820 62	2,003 93	2,700 31	1,670 10	2,865 86	1,834 00	68
155 06	151 24	259 80	138 32	114 09	169 86	69
84 27	71 05	72 27	63 09	64 48	81 82	70
1,794 02	1,242 31	1,702 50	1,146 60	1,829 71	1,215 49	71
583 83	444 38	535 31	372 33	624 55	321 06	72
2,929 98	1,963 07	2,932 03	1,836 49	3,194 94	1,884 64	73
165 25	59 59	68 71	22 68	82 31	60 48	74
53 11	41 45	49 13	37 28	49 99	29 19	75
39 89	22 32	32 67	21 58	33 97	24 66	76
690 80	500 00	656 02	500 00	774 48	100 00	77
5,766 55	4,642 30	5,361 08	3,502 14	7,467 99	4,007 92	78
						79
5,723 95	7,204 96	5,887 38	6,559 77	6,700 54	6,163 81	80
4,799 42	4,174 14	4,245 18	3,066 80	4,563 58	3,281 01	81
18,017 58	18,233 70	19,302 66	17,967 33	19,863 75	14,853 24	82
1,957 31	1,864 25	1,516 82	1,582 40	1,336 27	1,323 93	83
265 77	353 80	291 85	367 64	367 52	297 78	84
99 29	106 65	122 06	107 05	102 33	169 47	85
						86
						87
6,230 62	8,343 46	6,097 65	7,470 68	6,805 54	7,546 66	88
2,429 20	1,953 12	2,399 77	3,148 11	1,976 82	2,554 21	89
						90
			3 93			91
						92
96 50	163 99	18 00	53 30	529 07	29 54	93
230 00		337 50		343 60		94
						95
						96
672 31	771 04	907 59	586 24	639 60	589 61	97
126 09	353 98	74 50	61 85	16 85	10 35	98
Cr. 631 68	Cr. 3 54	277 00	199 18	77 60	859 91	99
	Cr. 50 56					100
	200 00		325 00			101
15 00		15 00				102
41 00	3 22	22 07		355 00	2 00	103
						104
						105
58,963 37	61,223 53	60,846 37	58,863 41	61,606 99	54,356 66	

Comparative Statement of Earnings and Expenditures

No.	Traffic Expenses.	1914 April.	1915 April.	1914 May.	1915 May.
		$ c.	$ c.	$ c.	$ c.
53	Superintendence	839 77	918 41	984 78	913 18
54	Outside Agencies	52 86	72	482 55	52
55	Advertising	122 50	151 77	854 00	122 57
56	Traffic Associations	.....	45 54	58 43	43 02
57	Fast Freight Lines	.....	.....	.....	.....
58	Industrial and Immigration Bureaus.	295 60	202 80	112 36	127 10
59	Stationery and Printing	76 27	105 89	96 32	103 15
60	Other Expenses	.....	.....	.....	.....
	Totals	1,387 00	1,425 13	2,588 44	1,309 54
	Transportation Expenses.				
61	Superintendence	1,208 36	1,139 93	1,163 51	1,301 46
62	Despatching Trains	1,082 55	1,008 60	1,102 77	1,104 87
63	Station Employees	10,539 10	9,634 20	10,240 12	9,608 84
64	Weighing and Car Service Associations	28 31	32 85	188 35	23 42
65	Coal and Ore Docks	.....	.....	.....	.....
66	Station Supplies and Expenses	1,128 57	1,156 13	640 71	919 77
67	Yardmasters and their Clerks	915 82	940 98	977 65	854 99
68	Yard Conductors and Brakemen	2,505 97	1,416 13	2,330 93	1,150 33
69	Yard Switch and Signal Tenders	44 55	93 10	102 69	97 85
70	Yard Supplies and Expenses	82 94	49 96	51 55	27 06
71	Yard Enginemen	1,825 31	966 52	1,735 52	790 19
72	Engine-house Expenses—Yard	504 02	331 09	467 95	268 25
73	Fuel for Yard Locomotives	2,891 20	1,265 81	2,941 74	1,054 19
74	Water for Yard Locomotives	69 08	13 94	68 03	10 22
75	Lubricants for Yard Locomotives	49 74	23 62	Cr. 2 63	20 41
76	Other Supplies for Yard Locomotives.	27 04	13 83	26 49	21 44
77	Operating Joint Yards and Terminals —Dr	Cr.10,024 23	100 00	670 61	Cr.1,500 00
78	Operating Joint Yards and Terminals —Cr	5,761 84	3,894 62	5,608 97	3,628 63
79	Motormen	.....	.....	.....	.....
80	Road Enginemen	6,063 92	5,589 04	6,058 08	5,584 44
81	Engine-house Expenses—Road	3,574 31	2,396 50	2,944 22	2,167 69
82	Fuel for Road Locomotives	16,247 76	12,073 62	15,764 25	11,209 87
83	Water for Road Locomotives	1,680 86	1,361 81	1,616 56	928 25
84	Lubricants for Road Locomotives	249 15	211 50	Cr. 80 75	197 11
85	Other Supplies for Road Locomotives.	101 85	136 18	96 90	108 85
86	Operating Power Plants	.....	.....	.....	.....
87	Purchased Power	.....	.....	.....	.....
88	Road Trainmen	6,015 55	6,746 86	6,347 12	6,534 05
89	Train Supplies and Expenses	1,806 47	2,571 18	3,259 69	1,512 58
90	Interlockers, Block and other Signals—Operations	.....	.....	.....	.....
91	Crossing, Flagmen and Gatemen	.....	.....	.....	96 42
92	Drawbridge Operation	.....	.....	.....	.....
93	Clearing Wrecks	82 46	14 84	195 18	Cr. 31
94	Telegraph and Telephone—Operation	20 63	.....	.....	.....
95	Operating Floating Equipment	.....	.....	.....	.....
96	Express Service	.....	.....	.....	.....
97	Stationery and Printing	726 46	488 99	1,211 00	629 90
98	Other Expenses	17 90	277 21	Cr. 43 68	61 75
99	Loss and Damage—Freight	832 61	271 40	259 58	497 75
100	Loss and Damage—Baggage	56 00	.....	15 00	.....
101	Damage to Property	.....	.....	.....	.....
102	Damage to Stock on Right-of-Way	.....	10 00	1 67	10 27
103	Injuries to Persons	404 29	.....	1,163 75	.....
104	Operating Joint Tracks—Dr	.....	.....	.....	.....
105	Operating Joint Tracks—Cr	.....	93 61	.....	25 00
	Totals	44,996 71	46,647 59	55,905 59	41,638 28

by Months, November, 1913, to October, 1915.---Continued.

1914 June.	1915 June.	1914 July.	1915 July.	1914 August.	1915 August.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
874 84	991 79	885 84	991 05	876 22	943 71	53
32 00	10 01	52 23	.....	38 69	1 09	54
180 25	168 20	533 46	206 88	287 85	356 27	55
.....	66 21	33 05	50 24	92 55	40 14	56
.....	.....	.....	.....	.....	.....	57
102 37	126 27	121 25	125 17	122 21	126 03	58
65 24	111 27	41 62	126 11	124 04	156 78	59
.....	.....	.....	.....	.....	.....	60
1,254 70	1,473 75	1,667 45	1,499 45	1,541 56	1,624 02	
1,220 05	1,273 81	1,287 62	1,161 28	1,130 70	1,150 08	61
1,084 95	992 36	1,163 74	1,372 52	1,208 09	1,289 44	62
10,575 22	9,613 27	10,612 75	9,730 14	11,106 46	9,756 12	63
24 67	27 59	37 14	20 88	28 21	24 73	64
.....	.....	.....	.....	.....	.....	65
1,011 52	665 59	568 84	785 04	418 27	628 01	66
925 00	919 67	932 61	971 57	945 29	942 55	67
2,396 42	1,161 70	2,447 67	1,250 33	2,184 00	1,275 19	68
174 44	90 82	217 95	91 20	103 74	75 05	69
53 44	53 82	41 02	49 30	37 80	48 69	70
1,872 38	770 43	1,679 61	816 11	1,471 96	800 50	71
502 15	256 52	497 27	242 16	432 53	187 61	72
2,874 90	866 17	2,343 61	1,125 61	2,349 43	1,046 76	73
46 77	58 65	67 14	18 41	62 69	28 93	74
50 14	20 73	50 71	Cr. 26 72	Cr. 3 74	24 59	75
37 13	8 10	25 39	10 32	29 39	10 23	76
667 17	100 00	633 20	100 00	644 18	100 00	77
5,393 50	3,529 67	5,747 96	3,874 75	5,569 53	3,349 93	78
.....	.....	.....	.....	.....	.....	79
6,517 62	5,594 05	6,524 81	6,391 22	6,703 77	6,957 45	80
2,656 41	1,865 42	2,908 34	1,845 51	2,850 20	2,004 94	81
14,894 47	11,356 25	14,547 87	13,086 46	13,600 67	15,393 43	82
1,387 80	1,284 78	1,243 36	1,268 93	1,174 02	967 91	83
253 57	205 02	294 05	Cr. 36 24	Cr. 44 91	265 71	84
86 26	85 79	83 70	93 45	91 96	113 75	85
.....	.....	.....	.....	.....	.....	86
.....	.....	.....	.....	.....	.....	87
7,176 28	6,593 50	8,016 35	7,463 32	7,504 57	8,088 19	88
1,659 95	1,684 74	1,807 04	1,973 59	1,944 38	2,282 02	89
.....	.....	.....	.....	.....	.....	90
.....	Cr. 96 42	Cr. 110 00	.....	.....	.....	91
.....	.....	.....	.....	.....	.....	92
188 33	501 25	38 38	44 35	222 34	37 85	93
.....	.....	.....	.....	.....	.....	94
.....	.....	.....	.....	.....	.....	95
.....	.....	.....	.....	.....	.....	96
641 62	650 06	573 78	581 55	742 95	786 72	97
47 92	90 79	10 32	61 26	888 25	105 25	98
81 29	Cr. 168 21	127 85	249 30	154 95	94 95	99
100 00	Cr. 119 50	20 00	100 00	.....	.....	100
.....	.....	.....	.....	.....	.....	101
.....	61 64	50 00	5 88	75 00	105 65	102
61 00	25 00	.....	3 00	85 75	60 61	103
.....	.....	.....	.....	.....	.....	104
.....	110 01	.....	94 48	.....	82 66	105
53,875 37	42,853 71	52,994 16	46,880 50	52,573 37	51,220 33	

Comparative Statement of Earnings and Expenditures by

No.	Traffic Expenses.	1914 September.	1915 September.	1914 October.
		$ c.	$ c.	$ c.
53	Superintendence	798 55	838 14	890 25
54	Outside Agencies	99 17	4 84	.....
55	Advertising	45 00	246 09	188 50
56	Traffic Associations	37 29	84 53	36 62
57	Fast Freight Lines	.....	.....	.....
58	Industrial and Emigration Bureaus	96 75	126 39	159 75
59	Stationery and Printing	133 80	105 17	232 22
60	Other Expenses	.....	.....	.....
	Totals	1,210 56	1,405 16	1,507 34
	Transportation Expenses.			
61	Superintendence	1,333 85	1,230 15	1,116 93
62	Despatching Trains	1,246 99	1,237 30	1,121 46
63	Station Employees	11,083 23	9,908 05	10,438 02
64	Weighing and Car Service Associations	19 68	19 00	19 46
65	Coal and Ore Docks	.....	.....	.....
66	Station Supplies and Expenses	575 60	788 40	1,167 06
67	Yardmasters and their Clerks	904 97	892 08	973 33
68	Yard Conductors and Brakemen	1,721 42	1,432 02	1,598 82
69	Yard Switch and Signal Tenders	Cr. 11 20	88 35	101 84
70	Yard Supplies and Expenses	47 46	46 59	53 07
71	Yard Enginemen	1,168 22	984 92	1,080 90
72	Engine-house Expenses—Yard	368 46	293 26	419 44
73	Fuel for Yard Locomotives	2,141 34	1,221 22	2,286 58
74	Water for Yard Locomotives	60 71	30 41	61 70
75	Lubricants for Yard Locomotives	103 21	25 55	37 07
76	Other Supplies for Yard Locomotives.	16 61	15 09	19 70
77	Operating Joint Yards and Terminals —Dr.	654 35	100 00	657 55
78	Operating Joint Yards and Terminals —Cr.	5,142 10	3,508 99	5,408 76
79	Motormen	.....	.....	.....
80	Road Enginemen	6,224 30	6,937 86	6,614 89
81	Engine-house Expenses—Road	2,521 63	2,034 17	3,048 50
82	Fuel for Road Locomotives	12,944 11	15,096 16	6,352 94
83	Water for Road Locomotives	1,242 11	883 48	1,142 98
84	Lubricants for Road Locomotives	584 55	247 55	283 43
85	Other Supplies for Road Locomotives.	93 11	147 03	88 21
86	Operating Power Plants	.....	.....	.....
87	Purchased Power	.....	.....	.....
88	Road Trainmen	7,547 21	8,213 16	7,830 91
89	Train Supplies and Expenses	2,173 35	1,302 14	2,782 42
90	Interlockers, Block and other Signals—Operations	.....	.....	.....
91	Crossing, Flagmen and Gatemen	110 00	.....	.....
92	Drawbridge Operation	.....	.....	.....
93	Clearing Wrecks	24 16	27 61	5 27
94	Telegraph and Telephone—Operation	.....	.....	.....
95	Operating Floating Equipment	.....	.....	.....
96	Express Service	.....	.....	.....
97	Stationery and Printing	520 30	758 52	908 50
98	Other Expenses	75 55	61 26	150 20
99	Loss and Damage—Freight	203 31	177 83	103 11
100	Loss and Damage—Baggage	27	11 14	.....
101	Damage to Property	.....	.....	.....
102	Damage to Stock on Right-of-Way	.....	78 10	.....
103	Injuries to Persons	55 00	156 34	Cr. 22 38
104	Operating Joint Tracks—Dr.	.....	.....	.....
105	Operating Joint Tracks—Cr.	.....	71 69	.....
	Totals	50,611 76	50,864 06	45,033 15

Months, November, 1913, to October, 1915—Continued.

1915 October.	1914 Total.	1915 Total.	Increase.	Decrease.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	
867 05	10,400 53	10,723 01	322 48	.....	53
.....	1,208 41	113 92	.....	1,094 49	54
268 50	3,537 13	2,561 78	.....	975 35	55
6 39	336 61	604 56	267 95	.....	56
.....	.....	.....	.....	.....	57
129 95	1,871 01	2,304 77	433 76	.....	58
96 03	1,518 96	1,829 55	310 59	.....	59
Cr. 2 46	.....	Cr. 2 46	.....	2 46	60
1,365 46	18,872 65	18,135 13	.....	737 52	
1,116 33	13,923 83	14,673 26	749 43	.....	61
1,283 66	13,497 82	13,707 90	210 08	.....	62
10,339 82	127,724 24	119,658 68	.....	8,065 56	63
.....	514 21	331 48	.....	182 73	64
.....	.....	.....	.....	.....	65
958 21	14,045 43	15,121 59	1,076 16	.....	66
900 51	11,415 53	11,163 95	.....	251 58	67
1,404 84	28,895 98	18,049 14	.....	10,846 84	68
95 00	1,533 51	1,382 25	.....	151 26	69
41 38	736 60	677 19	.....	59 41	70
1,002 57	19,417 60	12,012 85	.....	7,404 75	71
316 70	5,968 42	3,881 85	.....	2,086 57	72
1,387 38	32,871 21	20,183 64	.....	12,687 57	73
53 33	870 48	437 77	.....	432 71	74
27 52	529 49	294 89	.....	234 60	75
12 39	350 42	195 78	.....	154 64	76
100 00	Cr. 2,687 38	1,200 00	3,887 38	.....	77
3,824 39	68,902 24	47,681 26	.....	Cr. 21,220 98	78
.....	.....	.....	.....	.....	79
7,547 87	74,420 66	77,419 79	2,999 13	.....	80
2,409 93	41,790 24	32,652 38	.....	9,137 86	81
19,598 06	185,311 82	179,254 88	.....	6,056 94	82
1,125 43	17,435 13	16,209 07	.....	1,226 06	83
227 20	2,987 78	2,854 76	.....	133 02	84
61 51	1,175 61	1,335 99	160 38	.....	85
.....	.....	.....	.....	.....	86
.....	.....	.....	.....	.....	87
8,893 97	82,076 42	91,563 17	9,486 75	.....	88
991 87	25,886 37	24,897 16	.....	989 21	89
.....	.....	.....	.....	.....	90
.....	.....	3 82	3 82	.....	91
.....	.....	.....	.....	.....	92
Cr. 50 60	1,698 54	846 03	.....	852 51	93
.....	1,351 73	.....	.....	1,351 73	94
.....	.....	.....	.....	.....	95
.....	.....	.....	.....	.....	96
608 33	9,059 72	8,083 33	.....	976 39	97
62 26	1,460 71	1,191 67	.....	269 04	98
71 34	2,703 69	3,000 31	296 62	.....	99
.....	241 27	Cr. 42 84	.....	284 11	100
.....	.....	1,053 35	1,053 35	.....	101
63 23	221 67	409 77	188 10	.....	102
7 27	3,160 69	442 77	.....	2,717 92	103
.....	.....	.....	.....	.....	104
77 00	.....	Cr. 554 45	Cr 554 45	.....	105
56,755 92	651,687 20	625,911 92	.....	25,775 28	

Comparative Statement of Earnings and Expenditures by

No.	General Expenses.	1913 November.	1914 November.	1913 December.	1914 December.
		$ c.	$ c.	$ c.	$ c.
106	Salaries and Expenses of General Officers	2,332 41	1,212 57	1,186 25	2,597 18
107	Salaries and Expenses of Clerks and Attendants	2,865 86	3,058 65	2,906 09	3,522 51
108	General Office Supplies and Expenses	438 50	346 92	664 74	284 77
109	Law Expenses	400 00	400 00	405 00	400 50
110	Insurance	3,520 13	2,814 73	3,519 11	2,157 87
111	Relief Department Expenses	.....	.....	.....	.....
112	Pensions	.....	.....	.....	.....
113	Stationery and Printing	255 82	195 16	530 55	270 18
114	Other Expenses	.....	5 60	.....	11 70
115	General Administration Joint Tracks, Yards and Terminals—Dr.	.....	.....	.....	.....
116	General Administration Joint Tracks, Yards and Terminals—Cr.	22 69	45 32	22 86	43 24
	Totals	9,790 03	7,988 31	9,188 88	9,201 47

Comparative Statement of Earnings and Expenditures by

No.	General Expenses.	1914 April.	1915 April.	1914 May.	1915 May.
		$ c.	$ c.	$ c.	$ c.
106	Salaries and Expenses of General Officers	1,545 70	1,443 98	1,469 57	1,728 08
107	Salaries and Expenses of Clerks and Attendants	2,989 77	2,991 71	2,998 68	2,955 02
108	General Office Supplies and Expenses	460 83	460 08	620 73	342 55
109	Law Expenses	400 00	400 00	400 00	400 00
110	Insurance	3,101 98	2,191 56	2,737 73	2,002 53
111	Relief Department Expenses	.....	.....	.....	.....
112	Pensions	.....	320 00	.....	320 00
113	Stationery and Printing	345 13	160 73	105 97	316 97
114	Other Expenses	75	110 30	23 77	.....
115	General Administration Joint Tracks, Yards and Terminals—Dr.	.....	.....	.....	.....
116	General Administration Joint Tracks, Yards and Terminals—Cr.	41 02	47 32	62 50	47 68
	Totals	8,803 14	8,031 04	8,293 95	8,017 47

Comparative Statement of Earnings and Expenditures by

No.	General Expenses.	1914 September.	1915 September.	1914 October.
		$ c.	$ c.	$ c.
106	Salaries and Expenses of General Officers	2,472 29	2,424 06	1,338 15
107	Salaries and Expenses of Clerks and Attendants	3,138 72	2,675 25	3,187 23
108	General Office Supplies and Expenses	378 50	433 20	76 77
109	Law Expenses	415 95	406 25	385 00
110	Insurance	2,728 12	1,979 29	2,728 12
111	Relief Department Expenses	.....	.....	.....
112	Pensions	.....	165 00	.....
113	Stationery and Printing	219 22	210 96	104 32
114	Other Expenses	55	100 77	28 28
115	General Administration Joint Tracks, Yards and Terminals—Dr.	.....	.....	.....
116	General Administration Joint Tracks, Yards and Terminals—Cr.	67 84	7 26	70 27
	Totals	9,285 51	8,387 58	7,777 60

Months, November, 1913 to October, 1915---Continued.

1914 January.	1915 January.	1914 February.	1915 February.	1914 March.	1915 March.	No
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
1,046 03	1,408 98	1,356 36	1,336 74	2,326 98	2,445 14	106
3,599 30	3,167 81	3,123 67	3,309 55	3,078 24	2,996 90	107
601 53	778 41	540 11	384 40	679 19	426 69	108
417 00	555 00	400 00	400 00	413 09	400 00	109
2,778 45	2,191 55	2,754 18	2,198 34	2,781 27	2,120 53	110
.....	.....	.....	.....	.....	.....	111
.....	167 45	.....	295 00	.....	399 61	112
503 33	389 09	136 26	193 11	371 37	290 27	113
20 00	2 40	.....	25 00	.....	80 00	114
.....	.....	.....	.....	.....	.....	115
20 84	42 80	19 66	42 28	1,037 07	45 94	116
8,944 80	8,617 89	8,290 92	8,099 86	8,613 07	9,113 20	

Months, November, 1913, to October, 1915---Continued.

1914 June.	1915 June.	1914 July.	1915 July.	1914 August.	1915 August.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
2,517 96	2,464 74	1,346 68	1,510 60	1,591 03	1,400 27	106
3,157 18	2,565 63	2,953 54	2,532 84	3,146 25	2,654 26	107
767 43	544 98	524 90	550 52	411 18	367 22	108
405 00	541 00	401 00	400 00	400 00	400 00	109
2,728 12	2,057 38	2,729 35	1,954 55	2,734 40	2,024 05	110
.....	.....	.....	.....	.....	.....	111
.....	545 00	.....	545 00	.....	165 00	112
134 00	185 89	13 00	360 89	215 40	377 66	113
.....	23 76	.....	11 05	50 00	67 42	114
.....	.....	.....	.....	.....	.....	115
49 29	2,695 42	65 47	8 21	67 20	7 26	116
9,660 40	6,232 96	7,903 00	7,857 24	8,481 06	7,448 62	

Months, November, 1913, to October, 1915---Concluded.

1915 October.	1914 Total.	1915 Total.	Increase.	Decrease.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	
1,401 00	20,529 41	21,373 34	843 93	.....	106
2,607 04	37,144 53	35,037 17	.....	2,107 36	107
350 89	6,164 41	5,270 63	.....	893 78	108
416 49	4,842 04	5,119 24	277 20	.....	109
2,056 84	34,840 96	25,749 22	.....	9,091 74	110
.....	.....	.....	.....	.....	111
.....	.....	2,922 06	2,922 06	.....	112
97 82	2,934 37	3,048 73	114 36	.....	113
11 05	123 35	449 05	325 70	.....	114
.....	.....	.....	.....	.....	115
7 28	1,546 71	3,039 95	Cr. 1,493 24	.....	116
6,933 85	105,032 36	95,929 49	.....	9,102 87	

TEMISKAMING AND NORTHERN

Statement of Earnings and Expenditures by Months, November, 1914,

No.	RECEIPTS.	Per Cent.	1914 November.	Per Cent.	1914 December.
	I. Transportation—Rail Line:		$ c.		$ c.
101	Freight		71,316 58		78,370 76
102	Passenger		36,977 81		37,323 71
103	Excess baggage		497 53		209 28
104	Sleeping car				
105	Parlor and chair car		82 00		85 10
106	Mail		1,787 98		2,029 86
107	Express		3,560 57		3,609 54
108	Other passenger train				
109	Milk		80		18 61
110	Switching		131 00		379 43
111	Special service train				
112	Other freight train				
113	Water transfers—freight				
114	Water transfers—passenger				
115	Water transfers—vehicles and live stock				
116	Water transfers—other				
	Total		114,354 27		122,026 29
	II. Incidentals:				
131	Dining and buffet				
132	Hotel and restaurant				
133	Station, train and boat privileges		362 49		362 49
134	Parcel room				
135	Storage—freight		75 68		80 42
136	Storage—baggage		50 60		28 75
137	Demurrage		678 00		1,224 00
138	Telegraph and telephone		3,267 34		3,166 79
139	Grain elevator				
140	Stockyard				
141	Power				
142	Rent of buildings and other property		1,534 64		545 47
143	Miscellaneous		23 64		Dr. 3 77
	Total		5,992 39		5,404 15
	III. Joint Facility:				
151	Joint facility—Cr.				
152	Joint facility—Dr.				
	Total				
	Total revenue		120,346 66		127,430 44

ONTARIO RAILWAY.

to October, 1915, under New Classification effective November, 1914.

Per Cent.	1915 January.	Per Cent.	1915 February.	Per Cent.	1915 March.	Per Cent.	1915 April.	No.
	$ c.		$ c.		$ c.		$ c.	
.....	87,841 30	.....	81,894 86	.....	86,006 71	.....	59,581 12	101
.....	30,755 22	.....	26,244 94	.....	34,909 20	.....	36,630 78	102
.....	315 85	.....	395 33	.....	288 57	.....	495 57	103
.....	.....	.....	.....	.....	.....	.....	.....	104
.....	85 30	.....	76 10	.....	81 45	.....	97 70	105
.....	1,938 04	.....	1,788 96	.....	1,938 15	.....	1,938 04	106
.....	3,191 72	.....	2,532 93	.....	2,771 29	.....	2,977 82	107
.....	.....	.....	.....	.....	.....	.....	.....	108
.....	50 85	.....	34 79	.....	23 09	.....	10 67	109
.....	257 81	.....	304 34	.....	468 98	.....	459 34	110
.....	.....	.....	.....	.....	.....	.....	.....	111
.....	.....	.....	.....	.....	.....	.....	.....	112
.....	.....	.....	.....	.....	.....	.....	.....	113
.....	.....	.....	.....	.....	.....	.....	.....	114
.....	.....	.....	.....	.....	.....	.....	.....	115
.....	.....	.....	.....	.....	.....	.....	.....	116
.....	124,436 09	.....	113,272 25	.....	126,487 44	.....	102,191 04	
.....	.....	.....	.....	.....	.....	.....	.....	131
.....	.....	.....	.....	.....	.....	.....	.....	132
.....	362 49	.....	362 49	.....	362 49	.....	362 49	133
.....	.....	.....	.....	.....	.....	.....	.....	134
.....	126 65	.....	171 19	.....	103 28	.....	74 12	135
.....	33 05	.....	22 35	.....	18 50	.....	36 65	136
.....	1,206 00	.....	711 60	.....	885 75	.....	517 00	137
.....	2,709 87	.....	3,044 28	.....	4,502 60	.....	3,299 94	138
.....	.....	.....	.....	.....	.....	.....	.....	139
.....	57 77	.....	.....	.....	Dr. 28 88	.....	.....	140
.....	.....	.....	.....	.....	.....	.....	.....	141
.....	506 34	.....	2,073 07	.....	177 96	.....	729 72	142
.....	26 44	.....	1 00	.....	15 36	.....	16 71	143
.....	5,028 61	.....	6,385 38	.....	6,037 06	.....	5,036 63	
.....	.....	.....	.....	.....	.....	.....	.....	151
.....	24 52	.....	.....	.....	62 00	.....	99	152
.....	Dr. 24 52	.....	.....	.....	Dr. 62 00	.....	Dr. 99	
.....	129,440 18	.....	119,657 63	.....	132,462 50	.....	107,226 68	

Statement of Earnings and Expenditures by Months, November, 1914, to

No.	RECEIPTS.	Per Cent.	1915 May.	Per Cent.	1915 June.	Per Cent.	1915 July.
	I. Transportation—Rail Line:		$ c.		$ c.		$ c.
101	Freight		60,405 95		68,099 43		68,759 03
102	Passenger		38,875 85		38,600 15		43,895 52
103	Excess baggage		438 93		430 75		323 49
104	Sleeping car						
105	Parlor and chair car		103 40		88 20		84 55
106	Mail		1,950 36		1,952 60		2,027 70
107	Express		3,004 22		3,561 14		3,971 90
108	Other passenger train						
109	Milk		1 32		88		2 80
110	Switching		243 81		449 07		343 83
111	Special service train						
112	Other freight train						
113	Water transfers—freight						
114	Water transfers—passenger						
115	Water transfers—vehicles and live stock						
116	Water transfers—other						
	Total		105,023 84		113,182 22		119,408 82
	II. Incidentals:						
131	Dining and buffet						
132	Hotel and restaurant						
133	Station, train & boat privileges		362 49		362 49		452 49
134	Parcel room						
135	Storage—freight		78 50		104 05		134 53
136	Storage—baggage		34 10		28 40		33 70
137	Demurrage		455 00		695 00		568 00
138	Telegraph and telephone		3,463 94		3,679 77		3,667 55
139	Grain elevator						
140	Stockyard						
141	Power						
142	Rents of buildings and other property		451 91		789 60		360 89
143	Miscellaneous		33 76		3 85		21 92
	Total		4,879 70		5,663 14		5,239 08
	III. Joint Facility:						
151	Joint facility—Cr.						
152	Joint facility—Dr.		58 15				45 30
	Total		Dr. 58 15				Dr. 45 30
	Total revenue		109,845 39		118,845 36		124,602 60

October, 1915, under New Classification effective November, 1914—Continued.

Per Cent.	1915 August.	Per Cent.	1915 September.	Per Cent.	1915 October.	Per Cent.	1915 Total.	No.
	$ c.		$ c.		$ c.		$ c.	
.....	74,112 07	.....	90,374 63	.....	97,970 15	.....	924,732 59	101
.....	63,734 68	.....	46,901 47	.....	47,500 47	.....	482,349 80	102
.....	321 03	.....	630 49	.....	596 00	.....	4,942 82	103
.....	.....	.....	.....	.....	.....	.....	.....	104
.....	84 25	.....	81 90	.....	72 55	.....	1,022 50	105
.....	1,952 60	.....	1,952 60	.....	1,952 60	.....	23,209 49	106
.....	4,520 77	.....	4,687 32	.....	4,530 33	.....	42,919 55	107
.....	.....	.....	.....	.....	.....	.....	.....	108
.....	2 45	.....	2 40	.....	1 18	.....	149 84	109
.....	499 22	.....	620 60	.....	760 97	.....	4,918 40	110
.....	.....	.....	.....	.....	.....	.....	.....	111
.....	.....	.....	.....	.....	.....	.....	.....	112
.....	.....	.....	.....	.....	.....	.....	.....	113
.....	.....	.....	.....	.....	.....	.....	.....	114
.....	.....	.....	.....	.....	.....	.....	.....	115
.....	.....	.....	.....	.....	.....	.....	.....	116
.....	145,227 07	.....	145,251 41	.....	153,384 25	.....	1,484,244 99	
.....	.....	.....	.....	.....	.....	.....	.....	131
.....	.....	.....	.....	.....	.....	.....	.....	132
.....	272 49	.....	362 49	.....	362 49	.....	4,349 88	133
.....	.....	.....	.....	.....	.....	.....	.....	134
.....	86 37	.....	93 05	.....	70 55	.....	1,198 37	135
.....	25 15	.....	22 30	.....	22 20	.....	355 75	136
.....	407 00	.....	610 00	.....	451 00	.....	8,407 75	137
.....	3,555 38	.....	4,271 56	.....	3,857 58	.....	42,486 60	138
.....	.....	.....	.....	.....	.....	.....	.....	139
.....	.....	.....	.....	.....	.....	.....	28 89	140
.....	.....	.....	.....	.....	.....	.....	.....	141
.....	1,197 33	.....	543 86	.....	528 32	.....	9,439 11	142
.....	38 12	.....	2 75	.....	34 13	.....	213 91	143
.....	5,581 84	.....	5,906 01	.....	5,326 27	.....	66,480 26	
.....	.....	.....	.....	.....	.....	.....	.....	151
.....	62 85	.....	1 38	.....	66 73	.....	321 92	152
.....	Dr. 62 85	.....	Dr. 1 38	.....	Dr. 66 73	.....	Dr. 321 92	
.....	150,746 06	.....	151,156 04	.....	158,643 79	.....	1,550,403 33	

Earnings and Expenditures by Months, November, 1914, to October,

No.	Maintenance of Way and Structures.	November, 1914.	December, 1914.
		$ c.	$ c.
201	Superintendence	2,335 20	2,150 17
202	Roadway Maintenance	7,183 32	6,995 58
208	Bridges, Trestles and Culverts	1,571 14	8,314 14
212	Ties	519 11	118 81
214	Rails	941 95	1,089 15
216	Other Track Material	1,034 13	1,417 08
218	Ballast	Cr. 167 32	41 22
220	Track Laying and Surfacing	8,060 05	5,873 70
221	Right of Way Fences	129 31	.....
225	Crossings and Signs	240 49	53 13
227	Station and Office Buildings	1,234 88	707 44
229	Roadway Buildings	256 63	240 06
231	Water Stations	275 25	167 68
233	Fuel Stations	111 63	38 69
235	Shops and Enginehouses	808 98	765 92
247	Telegraph and Telephone Lines	218 52	306 01
249	Signals and Interlockers	3 48	.....
265	Miscellaneous Structures	133 44	5 24
269	Roadway Machines	13 41	8 70
271	Small Tools and Supplies	315 49	505 86
272	Removing Snow, Ice and Sand	1,250 41	2,089 20
274	Injuries to Persons	.....	75 00
275	Insurance	954 85	615 14
276	Stationery and Printing	36 89	95 05
277	Other Expenses	.....	.....
278	Maintaining Joint Tracks, Yards and other Facilities—Dr.	118 00	108 00
279	Maintaining Joint Tracks, Yards and other Facilities—Cr.	133 33	295 23
	Totals	27,445 91	31,485 74
	Maintenance of Equipment.		
301	Superintendence	689 41	734 02
302	Shop Machinery	255 08	620 30
308	Steam Locomotives—Repairs	6,777 54	10,239 59
309	" " Depreciation	1,237 13	1,237 13
310	" " Retirements	.....	.....
314	Freight Train Cars—Repairs	411 83	2,144 40
315	" " Depreciation	1,027 28	1,027 28
316	" " Retirements	.....	.....
317	Passenger " —Repairs	4,355 17	4,309 90
318	" " Depreciation	1,170 07	1,170 07
319	" " Retirements	.....	.....
326	Work Equipment—Repairs	3,285 23	3,745 79
327	" " Depreciation	278 12	278 12
329	Miscellaneous Equipment—Repairs	.....	.....
332	Injuries to Persons	86	76 68
333	Insurance	381 94	796 27
334	Stationery and Printing	82 52	56 39
335	Other Expenses	Cr. 5 27	Cr. 7 50
336	Maintaining Joint Equipment at Terminals—Dr.	.....	.....
337	Maintaining Joint Equipment at Terminals—Cr.	.....	.....
	Totals	19,946 91	26,428 44

1915, under New Classification effective November, 1914—Continued.

January, 1915.	February, 1915.	March, 1915.	April, 1915.	May, 1915.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	
1,806 62	1,806 43	1,894 58	1,980 24	2,017 48	201
4,204 85	4,399 79	5,758 91	7,649 43	7,523 80	202
915 41	1,031 58	2,192 10	2,333 39	3,529 15	208
48 90	.....	4,435 26	4,431 03	4,633 69	212
175 97	228 16	1,957 81	1,695 36	3,188 90	214
1,159 21	764 41	1,234 42	613 61	97 58	216
.....	6 36	1,500 00	1,501 89	1,513 05	218
5,095 23	4,370 06	8,391 73	5,515 06	8,224 61	220
7 78	.....	118 13	280 91	203 74	221
67 28	8 34	26 25	82 44	344 17	225
1,288 57	572 83	616 49	761 02	1,929 44	227
45 33	63 64	171 02	128 22	155 08	229
277 04	285 33	91 06	158 02	1,059 57	231
6 72	04	69 80	37 46	42 62	233
508 93	254 95	498 74	1,211 76	727 17	235
247 26	228 01	293 57	249 95	203 60	247
20 42	3 34	7 48	.....	37 50	249
3 08	.....	15 45	28 93	8 72	265
48 99	130 52	116 70	164 24	118 58	269
388 62	318 81	358 36	385 95	453 43	271
5,066 13	4,445 25	1,797 25	194 04	15 92	272
.....	.....	.....	.....	.....	274
623 58	630 37	547 86	623 59	639 49	275
102 13	45 56	104 37	51 05	48 28	276
.....	.....	.....	.....	.....	277
104 00	96 00	204 50	202 00	589 00	278
440 90	426 06	435 69	429 54	559 89	279
21,771 15	19,263 72	31,966 15	29,850 05	36,744 68	
856 11	857 99	862 50	811 45	860 03	301
562 87	375 93	436 81	319 67	248 49	302
10,733 76	7,284 68	11,068 76	9,084 93	4,913 44	308
1,237 13	1,237 13	1,237 13	1,237 13	1,237 13	309
.....	.....	.....	.....	.....	310
3,002 91	2,487 55	2,378 20	1,405 86	738 73	314
1,027 28	1,027 28	1,027 28	1,027 28	1,027 28	315
.....	.....	.....	.....	.....	316
4,297 35	7,386 85	2,435 64	3,714 13	3,526 29	317
1,170 07	1,170 07	1,170 07	1,170 07	1,170 07	318
.....	.....	.....	.....	.....	319
3,351 76	916 97	7,268 55	6,755 31	3,646 68	326
278 12	278 12	278 12	278 12	278 12	327
.....	.....	.....	2 56	.....	329
17	.....	.....	17	.....	332
813 11	813 11	813 11	813 11	706 20	333
80 51	82 36	107 51	55 18	61 19	334
Cr. 59 00	Cr. 8 70	80 47	.....	.....	335
.....	.....	.....	.....	.....	336
.....	.....	541 58	520 42	241 54	337
27,352 15	23,909 34	28,822 57	26,354 55	18,172 11	

Earnings and Expenditures by Months, November, 1914, to October,

No.	Maintenance of Way and Structures.	June, 1915.	July, 1915.
		$ c.	$ c.
201	Superintendence	2,203 93	2,172 17
202	Roadway Maintenance	5,358 88	7,282 52
208	Bridges, Trestles and Culverts	2,639 58	4,133 01
212	Ties	4,629 47	4,470 52
214	Rails	1,517 86	1,557 98
216	Other Track Material	433 06	212 76
218	Ballast	1,500 00	1,782 92
220	Track Laying and Surfacing	11,372 86	11,332 27
221	Right of Way Fences	314 90	162 18
225	Crossings and Signs	235 72	190 00
227	Station and Office Buildings	1,944 65	1,466 94
229	Roadway Buildings	67 69	100 23
231	Water Stations	195 36	645 95
233	Fuel Stations	104 14	20 29
235	Shops and Enginehouses	380 08	386 89
247	Telegraph and Telephone Lines	235 91	269 22
249	Signals and Interlockers	Cr. 10 00	1 45
265	Miscellaneous Structures	23	212 46
269	Roadway Machines	38 13	74 37
271	Small Tools and Supplies	191 86	230 23
272	Removing Snow, Ice and Sand	176 34	.....
274	Injuries to Persons	16 96	7 11
275	Insurance	666 92	628 54
276	Stationery and Printing	51 43	34 87
277	Other Expenses	.....	.....
278	Maintaining Joint Tracks, Yards and other Facilities—Dr.	202 00	212 50
279	Maintaining Joint Tracks, Yards and other Facilities—Cr.	408 97	502 91
	Totals	34,058 99	37,084 47
	Maintenance of Equipment.		
301	Superintendence	925 37	898 27
302	Shop Machinery	247 36	320 81
308	Steam Locomotives—Repairs	5,397 53	5,937 48
309	" " Depreciation	1,237 13	1,237 13
310	" " Retirements	.....	.....
314	Freight Train Cars—Repairs	716 64	2,012 87
315	" " Depreciation	1,027 28	1,027 28
316	" " Retirements	.....	.....
317	Passenger " —Repairs	3,679 11	3,566 85
318	" " Depreciation	1,170 07	1,170 07
319	" " Retirements	.....	.....
326	Work Equipment—Repairs	3,780 05	5,409 18
327	" " Depreciation	278 12	278 12
329	Miscellaneous Equipment—Repairs	.....	.....
332	Injuries to Persons	8 14	16 09
333	Insurance	721 75	656 96
334	Stationery and Printing	83 92	68 30
335	Other Expenses	115 74	115 64
336	Maintaining Joint Equipment at Terminals—Dr.	.....	.....
337	Maintaining Joint Equipment at Terminals—Cr.	221 88	281 44
	Totals	19,166 33	22,433 61

1915, under New Classification effective November, 1914—Continued.

August, 1915.	September, 1915.	October, 1915.	Total.	No.
$ c.	$ c.	$ c.	$ c.	
1,977 28	2,032 21	2,023 96	24,400 27	201
5,378 22	Cr. 98 57	826 25	62,462 98	202
3,202 39	205 51	354 35	30,421 75	208
3,126 92	4,279 07	Cr. 1,847 73	28,845 05	212
1,424 64	Cr. 3,866 35	Cr. 1,185 97	8,725 46	214
511 35	Cr. 198 47	711 49	7,990 63	216
Cr. 645 10	Cr. 657 13	Cr. 2,716 56	3,659 33	218
13,956 62	12,135 23	9,602 22	103,929 64	220
1,040 95	801 23	797 66	3,856 79	221
125 55	126 76	72 58	1,572 71	225
1,527 34	1,243 17	963 64	14,256 41	227
221 11	193 98	24 30	1,667 29	229
476 29	668 14	Cr. 23 79	4,275 90	231
18 02	.....	78 26	527 67	233
612 85	100 94	729 38	6,986 59	235
298 19	399 99	333 58	3,283 81	247
.....	.....	Cr. 2 43	61 24	249
65 13	.....	51 59	524 27	265
96 90	124 79	18 30	953 63	269
255 19	266 98	131 76	3,802 54	271
.....	.....	Cr. 12 17	15,022 37	272
.....	40 98	.....	140 05	274
635 46	599 66	654 74	7,820 20	275
18 16	94 12	26 76	708 67	276
25 00	.....	1 00	26 00	277
223 00	215 50	215 00	2,489 50	278
339 47	298 69	454 01	4,724 69	279
34,231 99	18,409 05	11,374 16	333,686 06	
887 36	876 07	907 46	10,166 04	301
478 72	384 05	291 30	4,541 39	302
5,466 77	5,618 64	3,746 46	86,269 58	308
1,237 13	1,237 13	1,237 13	14,845 56	309
.....	.....	.....	.....	310
1,624 12	749 39	Cr. 1,463 99	16,208 51	314
1,027 28	1,027 28	1,027 28	12,327 36	315
.....	.....	.....	.....	316
4,641 82	4,205 96	1,771 30	47,890 37	317
1,170 07	1,170 07	1,170 07	14,040 84	318
.....	.....	.....	.....	319
6,898 10	811 60	7,786 77	53,655 99	326
278 12	278 12	278 12	3,337 44	327
.....	.....	.....	2 56	329
.....	26 88	15	129 14	332
719 77	711 66	733 90	8,680 89	333
49 77	88 34	67 69	883 68	334
115 64	115 64	115 64	578 30	335
.....	.....	.....	.....	336
255 16	259 21	301 02	2,222 25	337
24,339 51	17,041 62	17,368 26	271,335 40	

Earnings and Expenditures by Months, November, 1914, to October,

	Traffic.	November, 1914.	December, 1914.
		$ c.	$ c.
351	Superintendence	794 47	876 33
352	Outside Agencies	10 36	56 54
353	Advertising	366 67	237 63
354	Traffic Associations	36 82	74 78
355	Fast Freight Lines	.....	.....
356	Industrial and Immigration Bureaus	143 00	130 20
357	Insurance	54 56	11 78
358	Stationery and Printing	150 15	474 99
359	Other Expenses	.....	.....
	Totals	1,556 03	1,862 25
	Transportation.—Rail Line.		
371	Superintendence	1,142 84	1,415 73
372	Despatching Trains	1,003 73	1,105 29
373	Station Employees	10,816 69	10,172 59
374	Weighing, Inspection and Demurrage Bureaus	.....	23 55
375	Coal and Ore Wharves	.....	.....
376	Station Supplies and Expenses	1,365 08	2,282 37
377	Yardmasters and Yard Clerks	940 00	950 85
378	Yard Conductors and Brakemen	1,586 53	1,864 04
379	Yard Switch and Signal Tenders	109 82	181 64
380	Yard Enginemen	1,009 24	1,267 97
381	Yard Motormen	.....	.....
382	Fuel for Yard Locomotives	3,553 81	2,978 49
383	Yard Switching Power produced	.....	.....
384	" " purchased	.....	.....
385	Water for Yard Locomotives	35 02	46 11
386	Lubricants for Yard Locomotives	33 32	37 95
387	Other Supplies for Yard Locomotives	16 89	18 93
388	Enginehouse Expenses—Yard	394 93	453 56
389	Yard Supplies and Expenses	72 71	71 72
390	Operating Joint Yards and Terminals—Dr.	500 00	500 00
391	Operating Joint Yards and Terminals—Cr.	5,059 21	4,858 71
392	Train Enginemen	6,268 99	6,620 33
393	Train Motormen	.....	.....
394	Fuel for Train Locomotives	14,240 49	16,146 27
395	Train Power produced	.....	.....
396	" purchased	.....	.....
397	Water for Train Locomotives	1,861 39	1,756 51
398	Lubricants for Train Locomotives	229 57	288 12
399	Other Supplies for Train Locomotives	99 70	106 56
400	Enginehouse Expenses—Train	3,380 64	3,725 63
401	Trainmen	7,709 92	7,959 40
402	Train Supplies and Expenses	2,921 66	2,001 94
403	Operating Sleeping Cars	.....	.....
404	Signal and Interlocker Operation	.....	.....
405	Crossing Protection	1 05	Cr. 1 16
406	Drawbridge Operation	.....	.....
407	Telegraph and Telephone Operation	.....	.....
408	Operating Floating Equipment	.....	.....
409	Express Service	.....	.....
410	Stationery and Printing	917 71	714 66
411	Other Expenses	25 85	19 85
412	Operating Joint Tracks and Facilities—Dr.	.....	.....
413	Operating Joint Tracks and Facilities—Cr.	.....	.....
414	Insurance	1,200 37	684 39
415	Clearing Wrecks	24 21	.....
416	Damage to Property	.....	528 35
417	Damage to Live Stock on Right of Way	25 00	50 00
418	Loss and Damage—Freight	265 82	484 58
419	" " Baggage	8 00	8 08
420	Injuries to Persons	33 33	152 00
	Totals	56,735 10	59,757 59

1915, under New Classification effective November, 1914—Continued.

January, 1915.	February, 1915.	March, 1915.	April, 1915.	May, 1915.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	
844 13	856 79	887 96	918 41	913 18	351
5 02	1 04	23 78	72	52	352
308 00	36 01	93 19	151 77	122 57	353
56 22	14 61	86 06	45 54	43 02	354
.....	.....	.....	.....	.....	355
567 75	268 67	231 44	202 80	127 10	356
11 78	11 78	11 78	11 78	12 02	357
63 38	62 05	274 58	105 89	103 15	358
.....	.....	.....	.....	.....	359
1,856 28	1,250 95	1,608 79	1,436 91	1,321 56	
1,276 06	1,183 38	1,282 21	1,139 93	1,301 46	371
1,149 98	1,082 00	1,078 15	1,008 60	1,104 87	372
10,321 87	10,090 10	9,666 99	9,634 20	9,608 84	373
30 14	51 23	78 09	32 85	23 42	374
.....	.....	.....	.....	.....	375
2,021 97	1,696 26	1,854 76	1,156 13	919 77	376
894 26	954 83	1,001 66	940 98	854 99	377
2,003 93	1,670 10	1,834 00	1,416 13	1,150 33	378
151 24	138 32	169 86	93 10	97 85	379
1,242 31	1,146 60	1,215 49	966 52	790 19	380
.....	.....	.....	.....	.....	381
1,963 07	1,836 49	1,884 64	1,265 81	1,054 19	382
.....	.....	.....	.....	.....	383
.....	.....	.....	.....	.....	384
59 59	22 68	60 48	13 94	10 22	385
41 45	37 28	29 19	23 62	20 41	386
22 32	21 58	24 66	13 83	21 44	387
444 38	372 33	321 06	331 09	268 25	388
71 05	63 09	81 82	49 96	27 06	389
500 00	500 00	100 00	100 00	Cr. 1,500 00	390
4,642 30	3,502 14	4,007 92	3,894 62	3,628 63	391
7,204 96	6,559 77	6,163 81	5,589 04	5,584 44	392
.....	.....	.....	.....	.....	393
18,235 70	17,967 33	14,853 24	12,073 62	11,209 87	394
.....	.....	.....	.....	.....	395
.....	.....	.....	.....	.....	396
1,864 25	1,582 40	1,323 93	1,361 81	928 25	397
353 80	367 64	297 78	211 50	197 11	398
106 65	107 05	169 47	136 18	108 85	399
4,174 14	3,036 80	3,281 01	2,696 50	2,167 69	400
8,343 46	7,470 68	7,546 66	6,746 86	6,534 05	401
1,953 12	3,148 11	2,554 21	2,571 18	1,512 58	402
.....	.....	.....	.....	.....	403
.....	.....	.....	.....	.....	404
.....	3 93	.....	.....	96 42	405
.....	.....	.....	.....	.....	406
.....	.....	.....	.....	.....	407
.....	.....	.....	.....	.....	408
.....	.....	.....	.....	.....	409
771 04	586 24	589 61	488 99	629 90	410
353 98	61 85	10 35	277 21	61 75	411
.....	.....	.....	.....	.....	412
.....	.....	.....	93 61	25 00	413
692 79	692 79	692 79	692 79	589 02	414
163 99	53 30	29 54	14 84	Cr. 31	415
200 00	325 00	.....	.....	.....	416
.....	.....	.....	10 00	10 27	417
Cr. 3 54	199 18	859 91	271 40	497 75	418
Cr. 50 56	.....	.....	.....	.....	419
3 22	.....	2 00	.....	.....	420
61,916 32	59,556 20	55,049 45	47,340 38	42,227 30	

Earnings and Expenditures by Months, November, 1914, to October,

	Traffic.	June, 1915.	July, 1915.
		$ c.	$ c.
351	Superintendence	991 79	991 05
352	Outside Agencies	10 01	.....
353	Advertising	168 20	206 88
354	Traffic Associations	66 21	50 24
355	Fast Freight Lines	.....	.....
356	Industrial and Immigrant Bureaus	126 27	125 17
357	Insurance	12 01	12 01
358	Stationery and Printing	111 27	126 11
359	Other Expenses	.....	.....
	Totals	1,485 76	1,511 46
	Transportation—Rail Line.		
371	Superintendence	1,273 81	1,161 28
372	Despatching Trains	992 36	1,372 52
373	Station Employees	9,613 27	9,730 14
374	Weighing, Inspection and Demurrage Bureaus	27 59	20 88
375	Coal and Ore Wharves	.....	.....
376	Station Supplies and Expenses	665 59	785 04
377	Yardmasters and Yard Clerks	919 67	971 57
378	Yard Conductors and Brakemen	1,161 70	1,250 33
379	Yard Switch and Signal Tenders	90 82	91 20
380	Yard Enginemen	770 43	816 11
381	Yard Motormen	.....	.....
382	Fuel for Yard Locomotives	866 17	1,125 61
383	Yard Switching Power produced	.....	.....
384	" " purchased	.....	.....
385	Water for Yard Locomotives	58 65	18 41
386	Lubricants for Yard Locomotives	20 73	Cr. 26 72
387	Other Supplies for Yard Locomotives	8 10	10 32
388	Enginehouse Expenses—Yard	256 52	242 16
389	Yard Supplies and Expenses	53 82	49 30
390	Operating Joint Yards and Terminals—Dr.	100 00	100 00
391	Operating Joint Yards and Terminals—Cr.	3,529 67	3,874 75
392	Train Enginemen	5,594 05	6,391 22
393	Train Motormen	.....	.....
394	Fuel for Train Locomotives	11,356 25	13,086 46
395	Train Power produced	.....	.....
396	" purchased	.....	.....
397	Water for Train Locomotives	1,284 78	1,268 93
398	Lubricants for Train Locomotives	205 02	Cr. 36 24
399	Other Supplies for Train Locomotives	85 79	93 45
400	Enginehouse Expenses—Train	1,865 42	1,845 51
401	Trainmen	6,593 50	7,463 32
402	Train Supplies and Expenses	1,684 74	1,973 59
403	Operating Sleeping Cars	.....	.....
404	Signal and Interlocker Operation	.....	.....
405	Crossing Protection	Cr. 96 42	.....
406	Drawbridge Operation	.....	.....
407	Telegraph and Telephone Operation	.....	.....
408	Operating Floating Equipment	.....	.....
409	Express Service	.....	.....
410	Stationery and Printing	650 06	581 55
411	Other Expenses	90 79	61 26
412	Operating Joint Tracks and Facilities—Dr.	.....	.....
413	Operating Joint Tracks and Facilities—Cr.	110 01	94 48
414	Insurance	600 93	601 20
415	Clearing Wrecks	501 25	44 35
416	Damage to Property	.....	.....
417	Damage to Live Stock on Right of Way	61 64	5 88
418	Loss and Damage—Freight	Cr. 168 21	249 30
419	" " Baggage	Cr. 119 50	100 00
420	Injuries to Persons	25 00	3 00
	Totals	43,454 64	47,481 70

1915, under New Classification effective November, 1914—Continued.

August, 1915.	September, 1915.	October, 1915.	Total.	No.
$ c.	$ c.	$ c.	$ c.	
943 71	838 14	867 05	10,723 01	351
1 09	4 84	.....	113 92	352
356 27	246 09	268 50	2,561 78	353
40 14	84 53	6 39	604 56	354
.....	.....	.....	.....	355
126 03	123 39	129 95	2,304 77	356
12 01	12 01	12 01	185 53	357
156 78	105 17	96 03	1,829 55	358
.....	.....	Cr. 2 46	Cr. 2 46	359
1,636 03	1,417 17	1,377 47	18,320 66	
1,150 08	1,230 15	1,116 33	14,673 26	371
1,289 44	1,237 30	1,283 66	13,707 90	372
9,756 12	9,908 05	10,339 82	119,658 68	373
24 73	19 00	.....	331 48	374
.....	.....	.....	.....	375
628 01	788 40	958 21	15,121 59	376
942 55	892 08	900 51	11,163 95	377
1,275 19	1,432 02	1,404 84	18,049 14	378
75 05	88 35	95 00	1,382 25	379
800 50	984 92	1,002 57	12,012 85	380
.....	.....	.....	.....	381
1,046 76	1,221 22	1,387 38	20,183 64	382
.....	.....	.....	.....	383
.....	.....	.....	.....	584
28 93	30 41	53 33	437 77	385
24 59	25 55	27 52	294 89	386
10 23	15 09	12 39	195 78	387
187 61	293 26	316 70	3,881 85	388
48 69	46 59	41 38	677 19	389
100 00	100 00	100 00	1,200 00	390
3,349 93	3,508 99	3,824 39	47,681 26	391
6,957 45	6,937 86	7,547 87	77,419 79	392
.....	.....	.....	.....	393
15,393 43	15,096 16	19,598 06	179,254 88	394
.....	.....	.....	.....	395
.....	.....	.....	.....	396
967 91	883 48	1,125 43	16,209 07	397
265 71	247 55	227 20	2,854 76	398
113 75	147 03	61 51	1,335 99	399
2,004 94	2,034 17	2,409 93	32,652 38	400
8,088 19	8,213 16	8,893 97	91,563 17	401
2,282 02	1,302 14	991 87	24,897 16	402
.....	.....	.....	.....	403
.....	.....	.....	.....	404
.....	.....	.....	3 82	405
.....	.....	.....	.....	406
.....	.....	.....	.....	407
.....	.....	.....	.....	408
.....	.....	.....	.....	409
786 72	758 52	608 33	8,083 33	410
105 26	61 26	62 26	1,191 67	411
.....	.....	.....	.....	412
82 66	71 69	77 00	554 45	413
601 04	600 19	600 42	8,248 72	414
37 85	27 61	Cr. 50 60	846 03	415
.....	.....	.....	1,053 35	416
105 65	78 10	63 23	409 77	417
94 95	177 83	71 34	3,000 31	418
.....	11 14	.....	Cr. 42 84	419
60 61	156 34	7 27	442 77	420
51,821 37	51,464 25	57,356 34	634,160 64	

Earnings and Expenditures by Months, November, 1914, to October,

	Miscellaneous Operations.	November, 1914.	December, 1914.
		$ c.	$ c.
441	Dining and Buffet Service		
442	Hotels and Restaurants		
443	Grain Elevators		
444	Stockyards		
445	Producing Power sold		
446	Other Miscellaneous Operations		
447	Telegraph and Telephone—Maintenance		
448	" " Operation		
	Totals		
	General		
451	Salaries and Expenses of General Officers	1,212 57	2,597 18
452	Salaries and Expenses of Clerks and Attendants.	3,058 65	3,522 51
453	General Office Supplies and Expenses	346 92	284 77
454	Law Expenses	400 00	400 50
455	Insurance	223 01	50 29
456	Relief Department Expenses		
457	Pensions		
458	Stationery and Printing	195 16	270 18
459	Valuation Expenses		
460	Other Expenses	5 60	11 70
461	General Joint Facilities—Dr.		
462	" " Cr.	45 32	43 24
	Totals	5,396 59	7,093 89

Earnings and Expenditures by Months, November, 1914, to October,

	Miscellaneous Operations.	June, 1915.	July, 1915.
		$ c.	$ c.
441	Dining and Buffet Service	831 61	678 03
442	Hotels and Restaurants		
443	Grain Elevators		
444	Stockyards		
445	Producing Power sold		
446	Other Miscellaneous Operations		
447	Telegraph and Telephone—Maintenance	401 58	321 57
448	" " Operation	1,336 58	1,393 37
	Totals	2,569 77	2,392 97
	General.		
451	Salaries and Expenses of General Officers	2,464 74	1,510 60
452	Salaries and Expenses of Clerks and Attendants.	2,565 63	2,532 84
453	General Office Supplies and Expenses	544 98	550 52
454	Law expenses	541 00	400 00
455	Insurance	55 77	55 84
456	Relief Department Expenses		
457	Pensions	545 00	545 00
458	Stationery and Printing	185 89	360 89
459	Valuation Expenses		
460	Other Expenses	23 76	11 05
461	General Joint Facilities—Dr.		
462	" " Cr.	2,695 42	8 21
	Totals	4,231 35	5,958 53

1915, under New Classification effective November, 1914—Continued.

January, 1915.	February, 1915.	March, 1915.	April, 1915.	May, 1915.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	
.....	.....	.....	2,306 23	681 22	441
.....	.....	.....	.....	.....	442
.....	.....	.....	.....	.....	443
.....	.....	.....	.....	.....	444
.....	.....	.....	.....	.....	445
.....	.....	.....	.....	.....	446
.....	.....	.....	2,538 84	123 33	447
.....	.....	.....	8,894 85	1,536 33	448
.....	.....	.....	13,739 92	2,340 88	
1,408 98	1,336 74	2,445 14	1,443 98	1,728 08	451
3,167 81	3,309 55	2,996 90	2,991 71	2,955 02	452
778 41	384 40	426 69	460 08	342 55	453
555 00	400 00	400 00	400 00	400 00	454
50 29	50 29	54 99	50 29	55 80	455
.....	.....	.....	.....	.....	456
167 45	295 00	399 61	320 00	320 00	457
389 09	193 11	290 27	160 73	316 97	458
.....	.....	.....	.....	.....	459
2 40	25 00	80 00	110 30	.....	460
.....	.....	.....	.....	.....	461
42 80	42 28	45 94	47 32	47 68	462
6,476 63	5,951 81	7,047 36	5,889 77	6,070 74	

1915, under New Classification effective November, 1914—Continued.

August, 1915.	September, 1915.	October, 1915.	Total.	No.
$ c.	$ c.	$ c.	$ c.	
676 60	382 62	631 27	6,187 58	441
.....	.....	.....	.....	442
.....	.....	.....	.....	443
.....	.....	.....	.....	444
.....	.....	.....	.....	445
.....	.....	.....	.....	446
446 86	592 24	509 47	4,933 89	447
1,392 27	1,500 33	1,526 20	17,579 93	448
2,515 73	2,475 19	2,666 94	28,701 40	
1,400 27	2,424 06	1,401 00	21,373 34	451
2,654 26	2,675 25	2,607 04	35,037 17	452
367 22	433 20	350 89	5,270 63	453
400 00	406 25	416 49	5,119 24	454
55 77	55 77	55 77	813 88	455
.....	.....	.....	.....	456
165 00	165 00	.....	2,922 06	457
377 66	210 96	97 82	3,048 73	458
.....	.....	.....	.....	459
67 42	100 77	11 05	449 05	460
.....	.....	.....	.....	461
7 26	7 20	7 28	3,029 95	462
5,480 34	6,464 06	4,932 78	70,994 15	

Statement of Earnings and Expenditures by Months, November, 1914,

No.	EXPENDITURES.	Per Cent.	1914 November.	Per Cent.	1914 December.
			$ c.		$ c.
1	Maintenance of way and structures	22.8	27,445 91	24.7	31,485 74
2	Maintenance of equipment	16.6	19,946 91	20.9	26,428 44
3	Traffic	1.3	1,556 03	1.4	1,862 25
4	Transportation—rail line	47.1	56,735 10	46.8	59,757 59
5	Transportation—water line	.....	.....	.....	.....
6	Miscellaneous operations	.....	.....	.....	.....
7	General	4.5	5,396 59	5.6	7,093 89
8	Transportation for investment—Cr.	.....	.....	.....	.....
	Total operating expenses	92.3	111,080 54	99.4	126,627 91
	Balance	.....	9,266 12	.....	802 53
	Other Income:				
	Ore royalties	.....	.....	.....	10,692 53
	Outside operations	.....	247 60	.....	.....
	Rent from locomotives	.....	2,082 94	.....	582 61
	Rent from work equipment	.....	533 75	.....	19 66
	Rent from joint facilities	.....	25 00	.....	25 00
	Rent from lease of road	.....	837 92	.....	837 92
	Rent from passenger equipment	.....	.....	.....	.....
	Miscellaneous income	.....	.....	.....	.....
	Total	.....	12,993 33	.....	12,960 25
	Deductions from Income:				
	Hire of equipment—freight cars	.....	2,849 50	.....	5,348 04
	Outside operations	.....	1,085 89	.....	2,390 01
	Rent for joint facilities	.....	.....	.....	.....
	Rent for passenger equipment	.....	.....	.....	.....
	Net results	.....	9,057 94	.....	5,222 20

to October, 1915, under New Classification effective November, 1914.

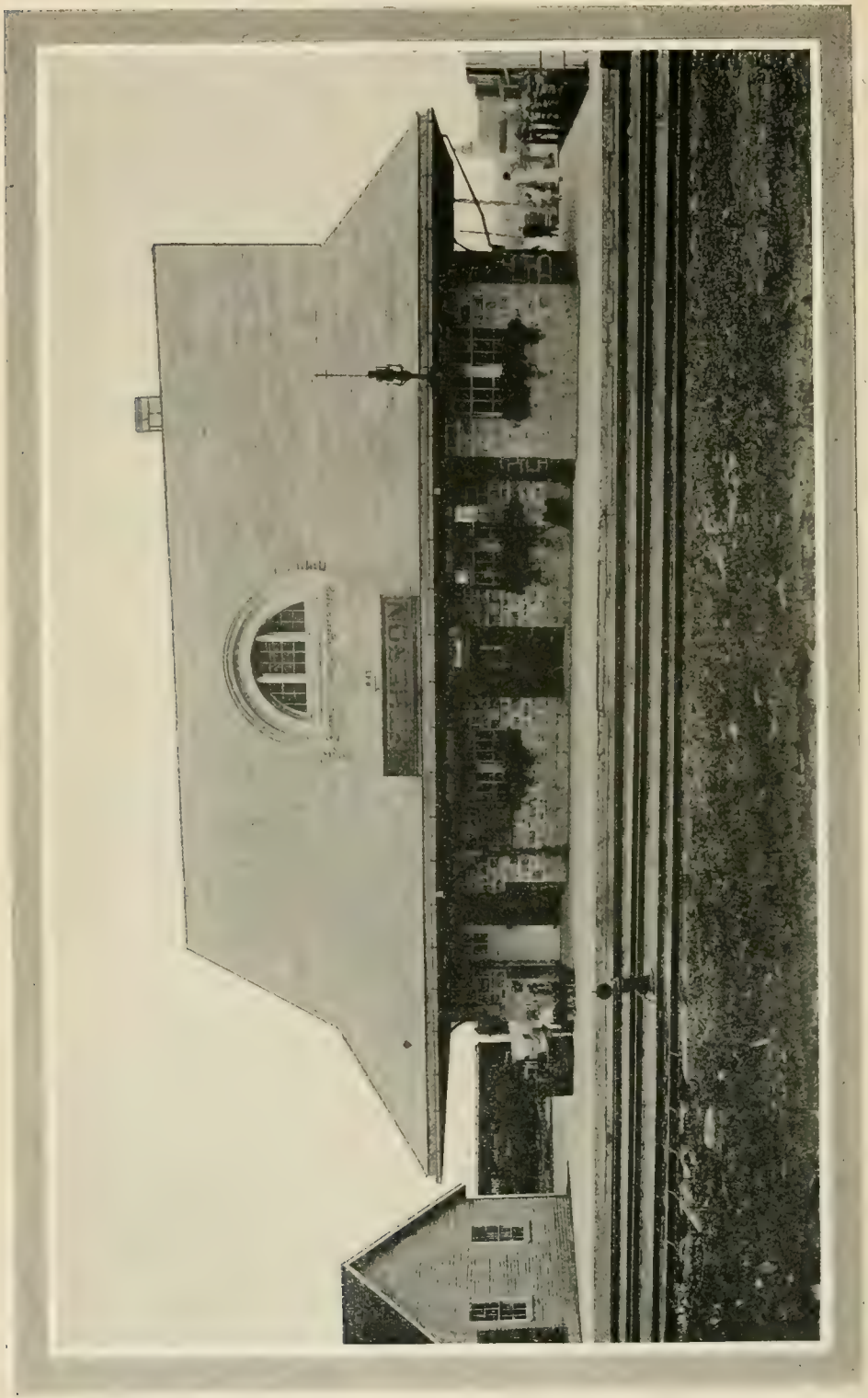
Per Cent.	1915 January.	Per Cent.	1915 February.	Per Cent.	1915 March.	Per Cent.	1915 April.	No.
	$ c.		$ c.		$ c.		$ c.	
16.8	21,771 15	16.1	19,263 72	24.1	31,966 15	27.8	29,850 05	1
21.1	27,352 15	20.0	23,909 34	21.8	28,822 57	24.6	26,354 55	2
1.5	1,856 28	1.0	1,250 95	1.2	1,608 79	1.3	1,436 91	3
47.8	61,916 32	49.8	59,556 20	41.6	55,049 45	44.2	47,340 38	4
.....	.....	.....	.....	.....	.....	.....	.....	5
.....	.....	.....	.....	.....	.....	12.8	13,739 92	6
5.0	6,476 63	5.0	5,951 81	5.3	7,047 66	5.5	5,889 77	7
.....	.....	.....	.....	.....	.....	.....	.....	8
92.2	119,372 53	91.9	109,932 02	94.0	124,494 62	116.2	124,611 58	
.....	10,067 65	.....	9,725 61	.....	7,967 88	.....	17,384 90	
.....	Dr. 396 12	.....	Dr. 356 63	.....	10,877 47	.....	Dr. 357 69	
.....	.....	.....	.....	.....	.....	.....	Dr. 247 60	
.....	458 21	.....	387 30	.....	150 22	.....	188 93	
.....	17 20	.....	5 50	.....	20 45	.....	29 96	
.....	3,084 53	.....	25 00	.....	25 00	.....	3,837 23	
.....	1,586 08	.....	759 44	.....	749 46	.....	804 47	
.....	.....	.....	16 48	.....	988 64	.....	4 12	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	14,817 55	.....	10,562 70	.....	20,779 12	.....	Dr. 13,125 48	
.....	6,694 81	.....	4,941 61	.....	5,337 20	.....	2,215 04	
.....	2,074 82	.....	2,192 42	.....	3,582 51	.....	Cr. 11,325 65	
.....	.....	.....	.....	.....	304 50	.....	302 00	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	6,047 92	.....	3,428 67	.....	11,554 91	.....	Dr. 4,316 87	

Statement of Earnings and Expenditures by Months, November 1914, to

No.	EXPENDITURES.	Per Cent.	1915 May.	Per Cent.	1915 June.	Per Cent.	1915 July.
			$ c.		$ c.		$ c.
1	Maintenance of way and structures	33.5	36,744 68	28.7	34,058 99	29.7	37,084 47
2	Maintenance of equipment	16.6	18,172 11	16.1	19,166 33	18.0	22,433 61
3	Traffic	1.2	1,321 56	1.2	1,485 76	1.2	1,511 46
4	Transportation—rail line	38.4	42,227 30	36.6	43,454 64	38.1	47,481 70
5	Transportation—water line	.....	.....	.....	.....	.....	.....
6	Miscellaneous operations	2.1	2,340 88	2.2	2,569 77	1.8	2,392 97
7	General	5.5	6,070 74	3.5	4,231 35	4.8	5,958 53
8	Transportation for investment —Cr.	.1	132 52	.....	94 25	.....	135 18
	Total operating expenses	97.2	106,744 75	88.3	104,872 59	93.6	116,727 56
	Balance	.....	3,100 64	.....	13,972 77	.....	7,875 04
	Other Income:						
	Ore royalties	.....	Dr. 365 14	.....	Dr. 355 81	.....	Dr. 364 58
	Outside operations	.....	.....	.....	.....	.....	.....
	Rent from locomotives	.....	690 80	.....	429 43	.....	456 88
	Rent from work equipment	.....	236 80	.....	132 55	.....	118 98
	Rent from joint facilities	.....	1,242 54	.....	1,118 12	.....	1,154 74
	Rent from lease of road	.....	1,728 66	.....	987 78	.....	984 27
	Rent from passenger equipment	.....	.....	.....	.....	.....	4 12
	Miscellaneous income	.....	.....	.....	187 00	.....	683 28
	Total	.....	6,634 30	.....	16,471 84	.....	10,912 73
	Deductions from Income:						
	Hire of equipment—freight cars	.....	1,677 60	.....	1,232 19	.....	1,665 95
	Outside operations	.....	.....	.....	.....	.....	.....
	Rent for joint facilities	.....	1,515 00	.....	302 00	.....	312 50
	Rent for passenger equipment	.....	.....	.....	.....	.....	.....
	Net result	.....	3,441 70	.....	14,937 65	.....	8,934 28

October, 1915, under New Classification effective November, 1914—Continued.

Per Cent.	1915 August.	Per Cent.	1915 September.	Per Cent.	1915 October.	Per Cent.	1915 Total.	No.
	$ c.				$ c.		$ c.	
22.7	34,231 99	12.2	18,409 05	7.2	11,374 16	21.5	333,686 06	1
16.1	24,339 51	11.2	17,041 62	10.9	17,368 26	17.5	271,335 40	2
1.1	1,636 03	.9	1,417 17	.9	1,377 47	1.2	18,320 66	3
34.4	51,821 37	34.0	51,464 25	36.1	57,356 34	40.9	634,160 64	4
.....	.....	.....	.....	.....	.....	.....	.....	5
1.6	2,515 73	1.6	2,475 19	1.7	2,666 94	1.9	28,701 40	6
3.6	5,480 34	4.3	6,464 06	3.1	4,932 78	4.6	70,994 15	7
.....	170 60	.....	275 81	.2	340 08	.1	1,148 44	8
79.5	119,854 37	64.2	96,995 53	59.7	94,735 87	87.5	1,356,049 87	
.....	30,891 69	.....	54,160 51	.....	63,907 92	.....	194,353 46	
.....	Dr. 363 02	.....	Dr. 371 63	.....	7,629 36	.....	26,268 74	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	311 64	.....	338 51	.....	297 79	.....	6,375 26	
.....	212 65	.....	90 82	.....	182 15	.....	1,600 47	
.....	1,064 73	.....	1,088 95	.....	1,124 42	.....	13,815 26	
.....	979 53	.....	834 52	.....	5,511 32	.....	16,601 37	
.....	.....	.....	Dr. 4 12	.....	.....	.....	1,009 24	
.....	679 56	.....	669 68	.....	638 46	.....	2,857 98	
.....	33,776 78	.....	56,807 24	.....	79,291 42	.....	262,881 78	
.....	6,457 91	.....	4,770 27	.....	Cr. 2,366 62	.....	40,823 50	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	323 00	.....	315 50	.....	315 00	.....	3,689 50	
.....	.....	.....	.....	.....	7,830 15	.....	7,830 15	
.....	26,995 87	.....	51,721 47	.....	73,512 89	.....	210,538 63	



Matheson Station, T. & N. O. Railway, 1915.

Freight Traffic Movement—Company's Material Excluded—Year Ending October 31st, 1915.

Commodity.	Freight originating on T. & N. O.	Received from other roads in Canada.	Received from other roads in U.S.	Total Freight.
	Whole Tons.	Whole Tons.	Whole Tons.	Whole Tons.
Products of Agriculture—				
Grain	1,168	4,214	.....	5,382
Flour	784	5,492	.....	6,276
Other mill products	818	1,632	.....	2,450
Hay	4,184	7,611	11	11,806
Tobacco	.....	.....	.....	.....
Cotton	.....	.....	.....	.....
Fruit and Vegetables	1,046	9,194	.....	10,240
Other products of Agriculture	.....	52	.....	52
Total	8,000	28,195	11	36,206
Products of Animals—				
Live Stock	960	850	.....	1,810
Dressed Meats	12	520	21	553
Other packing house products	33	273	.....	306
Poultry, Game and Fish	.....	204	.....	204
Wool	.....	25	.....	25
Hides and Leather	.....	199	.....	199
Other products of Animals	140	189	.....	329
Total	1,145	2,260	21	3,426
Products of Mines—				
Anthracite Coal	567	9,225	7,014	16,806
Bituminous Coal	1,064	23,821	26,609	51,494
Coke	.....	352	648	1,000
Ores	26,374	.....	.....	26,374
Stone, Sand and other like materials	22,956	4,634	24	27,614
Other Products of Mines	82	333	42	457
Total	51,043	38,365	34,337	123,745
Products of Forests—				
Lumber	119,019	3,922	.....	122,941
Other Products of Forests	269,810	1,814	.....	271,624
Total	388,829	5,736	.....	394,565
Manufactures—				
Petroleum and other Oils	91	3,519	.....	3,610
Sugar	15	433	.....	448
Naval Stores	.....	.....	.....	.....
Iron, Pig and Bloom	.....	440	.....	440
Iron and Steel Rails	1,307	337	139	1,783
Other Castings and Machinery	1,332	8,009	1,931	11,272
Bar and Sheet Metal	32	481	111	624
Cement, Brick and Lime	1,149	10,429	193	11,771
Agricultural Implements	15	464	.....	479
Wagons, Carriages, Tools, etc	189	1,290	6	1,485
Wines, Liquors and Beers	90	1,948	.....	2,038
Household Goods and Furniture	264	1,549	.....	1,813
Other Manufactures	8,548	7,761	716	17,025
Total	13,032	36,660	3,096	52,788
Merchandise	19,826	31,934	350	52,110
Miscellaneous—				
Other Commodities not mentioned above	5,298	8,612	188	14,098
Total Tonnage	487,173	151,762	38,003	676,938

Statistics—Temiskaming and Northern Ontario Railway Commission

Comparative Passenger and Freight Statement

	Passengers.	Revenue.
		$ c.
Number of passengers carried during year 1905.....	86,648	108,681 76
" " " " 1906.....	359,861	254,759 33
" " " " 1907.....	518,678	388,343 03
" " " " 1908.....	479,005	366,504 53
" " " " 1909.....	580,748	483,110 89
" " " " 1910.....	670,913	606,967 91
" " " " 1911.....	479,102	653,063 01
" " " " 1912.....	497,452	599,681 73
" " " " 1913.....	508,055	576,049 37
" " " " 1914.....	535,869	544,820 08
" " " " 1915.....	480,995	482,349 80
Totals.....	5,197,326	5,064,331 44

Number of passengers carried one mile, period 1905 to 1915, inclusive..... 209,480,255

	Tons.	Revenue.
		$ c.
Number of tons of freight carried during year 1905 ...	99,192	121,530 46
" " " " " 1906 ...	273,749	230,552 63
" " " " " 1907 ...	393,589	390,894 29
" " " " " 1908 ...	484,444	471,203 41
" " " " " 1909 ...	498,645	756,141 66
" " " " " 1910 ...	624,820	852,886 46
" " " " " 1911 ...	564,120	974,678 33
" " " " " 1912 ...	562,734	929,464 66
" " " " " 1913 ...	674,942	906,476 16
" " " " " 1914 ...	742,366	952,090 35
" " " " " 1915 ...	676,938	924,732 59
Total.....	5,595,539	7,510,651 00

Number of tons of freight carried one mile, period 1905 to 1915, inclusive..... 578,321,622

Equipment owned by Temiskaming and Northern Ontario Railway October 31st, 1915.

	Total authorized equipment.	Available for service.	Destroyed or transferred to other classes.	Capacity. Tractive Power.	Total Valuation.
					$ c.
STEAM LOCOMOTIVES.					
Class A 3	4	4	.....	112,640	.....
Class B 4	4	4	.....	170,000	.....
Class C 2	2	2	.....	26,488	.....
Class C 3	30	29	1	680,746	.....
Class F 3	4	4	.....	121,600	.....
Totals	44	43	1	.....	748,275 72
PASSENGER EQUIPMENT.					
First Class Coaches (wooden)	14	14	.....	.....	.....
" " " (steel)	3	3	.....	.....	.....
Second " " (wooden)	21	15	6	.....	.....
" " " (steel)	2	2	.....	.....	.....
Combination " (wooden)	2	2	.....	.....	.....
" " (steel)	3	3	.....	.....	.....
Parlor-Cafe	3	3	.....	.....	.....
Baggage and Express (wooden)	7	5	2	.....	.....
" " (steel)	2	2	.....	.....	.....
Mail and Express (wooden)	6	5	1	.....	.....
" " (steel)	3	3	.....	.....	.....
Private	3	3	.....	.....	.....
Pay Car	1	1	.....	.....	.....
Totals	70	61	9	.....	703,434 37
FREIGHT EQUIPMENT.					
Box	150	146	4	.....	.....
Stock	10	10	.....	.....	.....
Vans	24	23	1	.....	.....
Flats	502	465	37	.....	.....
Totals	686	644	42	.....	623,133 17
MAINTENANCE OF WAY AND STRUCTURES EQUIPMENT.					
Pile Driver	1	1	.....	.....	.....
Snow Plows	4	3	1	.....	.....
Flangers	3	3	.....	.....	.....
Steam Shovels	3	3	.....	.....	.....
Wrecking Cranes	2	2	.....	.....	.....
Auxiliaries Complete	2	2	.....	.....	.....
Road Cabin Cars	2	2	.....	.....	.....
Lidgerwood Unloaders	3	3	.....	.....	.....
Side Ballast Plows	6	6	.....	.....	.....
Centre Ballast Plows	3	3	.....	.....	.....
Jordan Ballast Spreader	1	1	.....	.....	.....
Pile Driver Tank Car	1	1	.....	.....	.....
Mahoney Ditching Machine	1	1	.....	.....	.....
Centre Ballast Spreader	1	1	.....	.....	.....
American Railroad Ditcher	1	1	.....	.....	.....
Cinder Cars, Steel	12	12	.....	.....	.....
Hart Convertible Cars	17	17	.....	.....	.....
Exhibition Car	1	1	.....	.....	.....
Fish Car	1	1	.....	.....	.....
Tank Cars	4	4	.....	.....	.....
Boarding Cars	8	8	.....	.....	.....
Hand Cars	120	115	5	.....	.....
Push Cars	86	80	6	.....	.....
Motor Cars	3	3	.....	.....	.....
Velocipedes	20	6	14	.....	.....
Totals	306	280	26	.....	168,281 62
Grand Total	.....	.....	.....	.....	$2,243,124 88

Temiskaming and Northern Ontario Railway.

Statement of North Bound and South Bound—Tonnage and Tons One Mile, Year ending October 31st, 1915.

Month.	South Bound (Pounds)	North Bound (Pounds)	Total Tonnage (Pounds)	Whole Tons	Tons (One Mile)
November 1914....	44,241,036	44,446,154	88,687,190	44,344	6,737,278
December "	64,764,439	43,476,803	108,241,242	54,121	8,562,685
January 1915....	125,503,283	43,642,009	169,145,292	84,573	10,407,277
February "	117,517,633	44,573,614	162,091,247	81,045	9,374,981
March "	103,605,708	46,180,608	149,786,316	74,893	9,141,419
April "	39,670,042	36,026,736	75,696,778	37,848	5,177,220
May "	48,193,266	32,485,596	80,678,862	40,339	5,369,383
June "	61,746,526	33,202,857	94,949,383	47,475	5,759,692
July "	71,543,578	31,554,059	103,097,637	51,549	7,140,238
August "	63,594,874	35,386,402	98,981,276	49,491	7,951,153
September "	54,568,689	50,502,759	105,171,448	52,586	8,969,984
October "	58,449,242	58,899,218	117,348,460	58,674	10,348,306
Total.....	853,498,316	500,376,815	1,353,875,131	676,938	94,939,616

Temiskaming and Northern Ontario Railway,

FOREST PRODUCTS.

Statement of Tonnage, Tons one mile. Total Revenue, and Revenue per ton per mile, for 12 months November 1st, 1914, to October 31st, 1915, under various headings.

Commodity.	Gross Tonnage. Pounds.	Whole Tons.	Ton miles.	Revenue.	Revenue per ton per mile.
				$ c.	
Lumber	129,323,682	64,662	7,220,010	72,688 34	1c.
Pulpwood.....	457,342,078	228,671	31,068,094	176,217 70	.5672
Pulp	71,259,775	35,630	7,970,351	35,848 20	.4497
Slabwood.....	17,711,070	8,856	302,765	5,141 87	1.6983
Poles	7,754,648	3,877	398,340	4,003 40	1c.
Posts.....	3,269,070	1,634	197,463	1,516 49	.7674
Piling	4,239,280	2,120	181,787	1,538 26	.8461
Timber	4,674,530	2,337	62,180	1,704 20	2.740
Logs	85,343,940	42,672	1,936,342	12,625 45	.652
Ties.....	7,331,080	3,665	428,437	4,504 69	1c.
Shingles	317,500	159	4,637	150 28	3.240
Laths	389,200	195	39,403	337 29	.8560
Sawdust	175,400	87	3,368	68 32	2c.
Total.....	789,131,253	394,565	49,813,177	$316,324 49	.6350

Temiskaming and Northern Ontario Railway.

Statement of Passengers, Revenue, Passengers one Mile and Passenger Revenue per mile from November 1st, 1914, to October 31st, 1915.

Form of Ticket.	Passengers.	Revenue.	Passengers One Mile.	Passenger Revenue per Passenger Mile.
		$ c.		
Commercial	22,422	43,483 55	1,919,387	2.27c.
Week Ends	9,436	7,826 32	533,530	1.47c.
Excursion	27,314	38,792 27	2,887,718	1.34c.
Market	4,987	1,278 35	82,569	1.55c.
Scholars	3,980	329 45	57,651	.57c.
Militia	4,920	15,549 21	1,107,032	1.40c.
Ordinary	407,936	375,090 65	14,858,860	2.59c.
Total	480,995	$482,349 80	21,446,747	2.25c.

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION.

Statement of Materials and Supplies on hand October 31st, 1915.

Shop Stock—North Bay.

Material.	Amount.
Air brake supplies	$1,080 54
Wheels	3,488 22
Bolts, screws, etc.	2,771 06
Coach fittings	10,314 39
Building material	568 70
Castings (iron and steel)	6,265 78
Couplers and parts	1,504 47
Forgings	977 48
Telegraph and telephone material	999 44
Electrical material	5,898 82
Glass	579 00
Hardware	769 52
Castings (brass)	4,252 50
Lamps and fittings	477 49
Locomotive parts, finished	4,529 73
Lumber	10,173 05
Metals	343 23
Miscellaneous	2,380 56
Water service material	9 83
Paints and painters' tools	876 93
Pipes and fittings	3,536 60
Rubber hose	1,027 03
Commissaries	639 85
Springs	2,487 74
Iron and steel	2,717 15
Steam shovel and ledgerwood parts	513 43
Machinery and tools	1,701 82
Track material and tools	25,617 07
Bridge girder, second-hand	250 00
Total	$96,751 43

Shop Stock—Englehart.

Material.	Amount.
Air brake supplies	$28 46
Wheels	2,620 42
Bolts, nuts and washers	129 18
Building material	.....
Coach fittings	28 01
Castings (iron and steel)	302 41
Couplers and parts	157 23
Forgings	50 33
Electrical material	80 84
Glass	35 68
Hardware	6 90
Castings (brass)	92 54
Lamps and fittings	111 83
Locomotive parts, finished	41 22
Lumber	25 96
Metals	5 07
Miscellaneous	57 89
Paints and painter's tools	1 71
Pipes and fittings	203 66
Rubber	110 16
Springs	230 82
Iron and steel	34 34
Machinery and tools	47 27
Total	$4,401 93

Shop Stock—Cochrane.

Material.	Amount.
Air brake supplies	$9 09
Wheels	61 18
Bolts, screws, etc.	181 57
Coach fittings	12 08
Castings (iron and steel)	136 54
Couplers and parts	124 87
Forgings	48 39
Electrical material	77 82
Glass	7 18
Hardware	4 56
Castings (brass)	71 55
Lamps and fittings	18 22
Locomotive parts, finished	15 25
Miscellaneous	36 40
Paints and painters' tools	2 14
Pipes and fittings	44 40
Rubber hose	28 52
Springs	10 21
Iron and steel	4 56
Machinery and tools	8 77
Total	$903 30

Shop Stock—Timmins.

Material.	Amount.
Air brake supplies	$8 27
Wheels	84 14
Bolts, screws, etc.	11 56
Building material	.....
Coach fittings	43
Castings (iron and steel)	46 05
Couplers and parts	14 94
Forgings	48 22
Telegraph and telephone	.....

Shop Stock—Timmins.—Continued.

Electrical material	5 45
Glass	32
Hardware	136 27
Castings (brass)	15 48
Lamps and fittings	1 35
Locomotive parts, finished	.....
Miscellaneous	14 81
Paints and painters' tools	4 19
Pipes and fittings	10 06
Rubber hose	66 07
Springs	6 18
Machinery and tools	7 68
Total	$481 47

RECAPITULATION OF SHOP STOCK.

Location.	Amount.
North Bay	$96,751 43
Englehart	4,401 93
Timmins	481 47
Cochrane	903 30
Total	$102,538 13

Less unvouchered material:—		
Cochrane Hardware, 50 tin discs	$2 20	
J. Stone & Co., 200 ft. Balata belting	96 00	
J. Stone & Co., 200 " "	96 00	
Canadian Northern, 10 6x8 drawbar springs	10 00	
Canadian General Electric, invoice No. 4113	26 14	
Canada Paint Co., invoice No. 4111	93 50	
Nipissing Central Ry., B-C No. 984—returned material	256 87	
Total	$580 71	
		580 71
		$101,957 42
Plus freight charges paid in October goods received in November:		
Leonard & Sons, grates, freight charges, paid	$3 13	
Canadian Allis-Chalmers, invoice No. 4375, freight charges paid	66 33	
Canadian Steel Foundries, 10 switch pts., freight charges paid	54 00	
To freight on cars 327821 and 332061, B. C. fir	594 75	
Preston Car & Coach Co., freight charges paid	4 18	
Canadian Fairbanks-Morse Co., freight charges paid	2 00	
Total	$724 39	
		724 39
Total shop stock		$102,681 81

Stationery Stock.

North Bay	$3,700 72

Oil and Waste Stock.

North Bay	$1,115 86
Englehart	186 35
Timmins	72 95
Elk Lake	55 23
Iroquois Falls	.....
Cochrane	179 43
	$1,609 82

Tie Stock.

North Bay and Line	$18,986 30

Ice.

North Bay	$460 20
Englehart	72 90
Cochrane	5 90
	$539 00

Anthracite Coal.

Location.	Amount—Weight.
North Bay	124,000 lbs.
Widdifield	33,000 "
North Bay Freight Shed	45,600 "
Tomiko	24,000 "
Diver	24,500 "
Redwater	28,000 "
Temagami	85,200 "
Latchford	68,000 "
Gillies Depot	4,600 "
Cobalt	118,500 "
North Cobalt	37,000 "
Haileybury	116,163 "
New Liskeard	95,000 "
Uno Park	40,200 "
Thornloe	53,000 "
Earlton	64,000 "
Elk Lake	64,000 "
Heaslip	31,000 "
Englehart	252,300 "
Charlton	64,000 "
Dane	23,500 "
Swastika	33,000 "
Matheson	94,300 "
Porquis Junction	90,000 "
Iroquois Falls	89,900 "
Porcupine	57,000 "
South Porcupine	75,600 "
Schumacher	60,000 "
Timmins	37,000 "
Cochrane	18,500 "
Total	1,950,863 lbs. or 975½ tons.
975½ tons at $6.54 per ton	$6,379 77

Bituminous Coal.

North Bay Boiler Room	200,000 lbs.	
North Bay Dump	16,350,000 "	
North Bay Cars	1,378,200 "	
North Bay Chutes	222,000 "	
In transit	478,300 "	
Widdifield	3,500 "	
Tomiko	1,000 "	
Temagami	41,700 "	
Latchford	20,000 "	
Redwater	90,000 "	
Englehart	784,000 "	
Cochrane	725,280 "	
Timmins	69,000 "	
Elk Lake	50,000 "	
Iroquois Falls	44,000 "	
Total	20,456,980 lbs. or 10,228½ tons.	
10,228½ tons at $4.24 per ton	$43,368 84	
Less 1914 rebate	1,500 00	
		$41,868 84

Rails.

North Bay and Line	$76,748 23

SUMMARY.

Shop stock	$102,681 81
Stationery	3,700 72
Oil and waste	1,609 82
Ties	18,986 30
Ice	539 00
Anthracite coal	6,379 77
Bituminous coal	41,868 84
Rails	76,748 23
Total	$252,514 49

TRAFFIC AND MILEAGE STATISTICS.

Passenger Traffic.

1. Total passengers carried earning revenue	480,995
2. Number of passengers carried one mile	21,446,747
3. Number of passengers carried one mile per mile of road	65,289
4. Average distance carried—miles	44.59
5. Total passenger revenue	$482,349 80
6. Average amount received from each passenger	1 00
7. Average receipts per passenger per mile (cents)	2 25
8. Total passenger train service revenue	554,594 00
9. Passenger service train revenue per mile of road	1,688 31
10. Passenger service train revenue per train mile	1 15

Freight Traffic.

11. Number of tons carried earning revenue	676,938
12. Number of tons carried earning revenue one mile	94,939,616
13. Number of tons carried earning revenue one mile per mile of road	289,018
14. Average distance haul of one ton—miles	140.25
15. Total freight revenue	$929,650 99
16. Average amount received for each ton	1 37
17. Average amount received per ton per mile (cents)	98
18. Freight revenue per mile of road	2,830 07
19. Freight revenue per train mile	2 23

Total Traffic.

20. Operating revenue	$1,550,403 33
21. Operating revenue per mile of road	4,719 79
22. Operating revenue per train mile	1 86
23. Operating expenses	1,356,049 87
24. Operating expenses per mile of road	1 63
25. Operating expenses per train mile	4,128 13
26. Net operating revenue	194,353 46
27. Net operating revenue per mile of road	591 66

Car Mileage.

28. Average number of passengers per car mile	9
29. Average number of passengers per train mile	44
30. Average number of passenger cars per train mile	4.73
31. Mileage of passenger cars	2,281,600
32. Mileage of loaded freight cars—north and east	2,914,302
33. Mileage of loaded freight cars—south and west	2,492,009
34. Mileage of empty freight cars—north and east	1,002,850
35. Mileage of empty freight cars—south and west	1,248,489

TRAFFIC AND MILEAGE STATISTICS.—*Continued.*

Car Mileage.—Continued.

36. Average number of freight cars per train mile	18.39
37. Average number of loaded freight cars per train mile	12.98
38. Average number of empty freight cars per train mile	5.41
39. Average number of tons freight per train mile	227.94
40. Average number of tons freight per loaded car mile	17.56
41. Average mileage operated during year	328.49

Train Mileage.

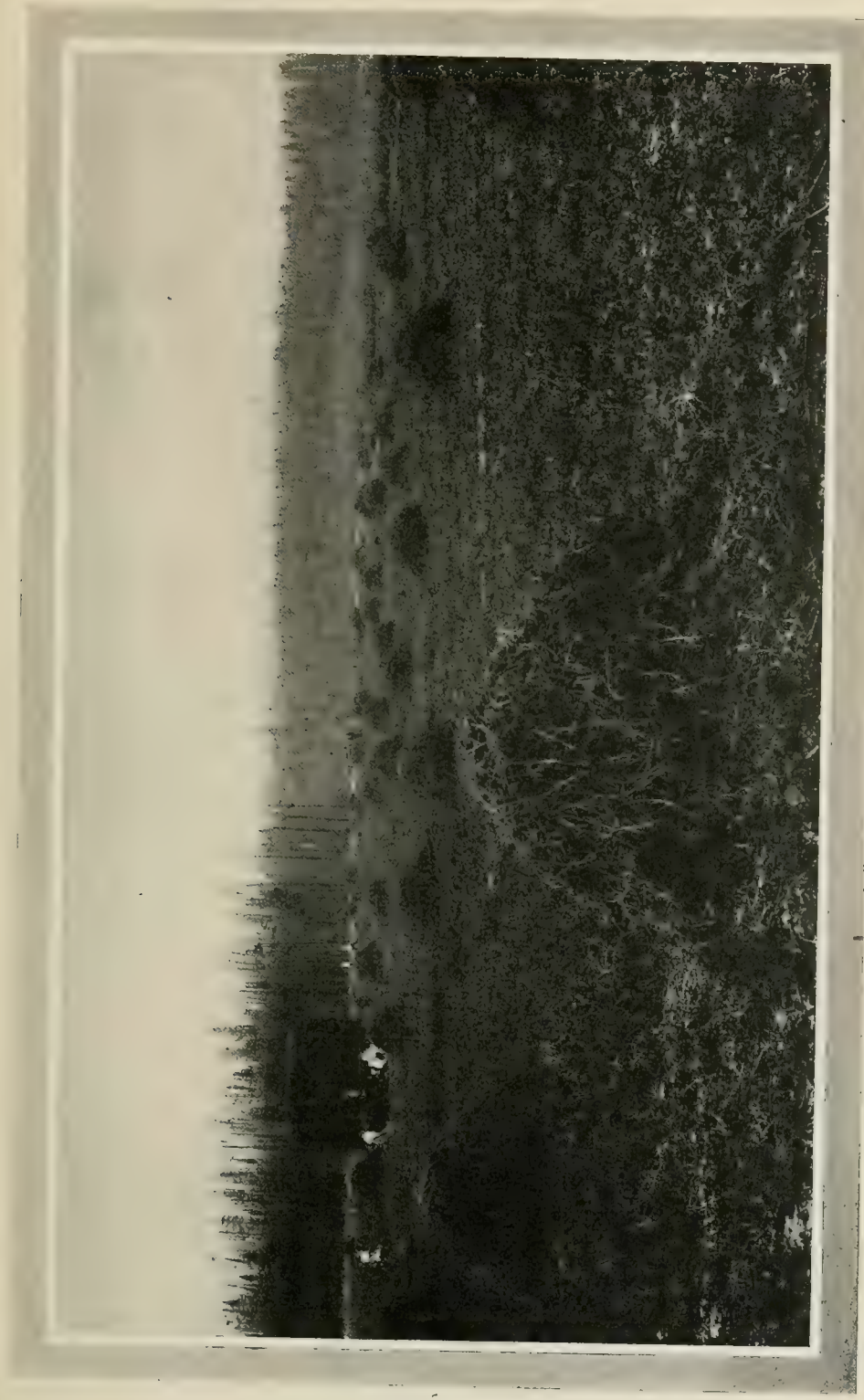
42. Mileage of revenue passenger trains	417,290
43. Mileage of revenue mixed trains	66,019
44. Mileage of revenue freight trains	350,489
45. Total revenue train mileage	833,798

TEMISKAMING AND NORTHERN ONTARIO RAILWAY.

STATEMENT OF LAND PURCHASED.

Fiscal Year Ended October 31st, 1915.

Stanley Precious, Nahma, Ont., N. ½ Lot 2, Con. 3, Township Lamarche, 4.14 acres	$130 90
Lawrence O'Connor, Temagami, Ont., Lots 527, 528, 529, 530, 531, 547 and 548, Temagami, Ont.	3,500 00
D. Fasken, Toronto, Ont., Lots 562 and 573, Temagami, Ont.	1,000 00
Mrs. Minnie Heaslip, Heaslip, Ont., Lot 5, Con. 3, Township Evanturel, 66 acres	163 37
Thos. Heaslip, Heaslip, Ont., Lot 6, Con. 3, Township Evanturel, 35 acres	86 63
P. B. Barnard, Toronto, Ont., N. ½ Lot 8, Con. 5, Township Taylor	25 00
E. Aumont, Joliette, Que., N. ½ Lot 9, Con. 6, Township Taylor	100 00
	$5,005 90



Clover Hay, Government Demonstration Farm, Monteith, Ont., 1915.

TOWNSITE REPORT

Statement, Receipts and Expenditures, Nov. 1st, 1914, to Oct. 31st, 1915.

Expenditures.			Receipts.		
Latchford.			*Received on lots sold during year.*		
Donation to Town..	$200 00		Englehart	$122 50	
Miscellaneous expenses	35 50		Matheson	678 75	
		$235 50	Porquis Jct.	90 00	
			Monteith	96 75	
			Cochrane	50 00	
			Cochrane Annex....	100 00	
					$1,138 00
Englehart.			*Received on deferred payments.*		
Donation to Town towards installation Sewerage and Waterworks System ..	$6,402 49		Cobalt	$151 40	
Clearing	892 87		Englehart	461 21	
		$7,295 36	Matheson	1,002 50	
			Matheson Sub-Division	100 00	
			Porquis Junct.	534 96	
			Monteith	106 50	
			Cochrane	52 00	
			Cochrane Annex ...	980 00	
					$3,388 57
Matheson.			*Interest received on Current Sales.*		
Donation to Town..	$750 00		Matheson		50
Clearing and miscellaneous expenses..	280 75		*Interest received on deferred payments.*		
		$1,030 75	Cobalt	$40 88	
			Englehart	42 21	
			Matheson	90 93	
Porquis Jct.			Matheson Sub-Division	13 40	
			Porquis Jct.	56 62	
Clearing		785 26	Monteith	12 14	
			Cochrane	48 00	
			Cochrane Annex ...	147 72	
					$451 90
			Hay sold from Englehart Townsite		25 00
Cochrane.			Interest received on bank deposit		1,763 36
Miscellaneous expenses		13 92	Miscellaneous credits		5,402 00
General and miscellaneous expenses		3,422 87	Debit to profit and loss		614 33
		$12,783 66			$12,783 66

TOWNSITES ACCOUNTS

Statement of Lots Sold—Townsites—Nov. 1st, 1914, to Oct. 31st, 1915.

Townsites.	Lots sold.	Sale Price.	Amount paid.	Balance due.
		$ c.	$ c.	$ c.
Englehart	5	650 00	122 50	527 50
Matheson	26	1,635 00	678 75	956 25
Porquis Junction	3	210 00	90 00	120 00
Monteith	8	395 00	96 75	298 25
Cochrane	Block No. 1	1,000 00	50 00	950 00
Cochrane Annex	1	100 00	100 00	.....
Total	43	3,990 00	1,138 00	2,852 00

Statement Showing Employees, Total Days Worked, Average Daily Compensation, Etc.

November 1st, 1914, to October 31st, 1915.

Class.	Number.	Total days worked.	Total compensation.	Average daily compensation.
			$ c.	$ c.
I. *General Offices*:				
1. General officers	7	2,313	16,110 78	6 97
2. Chief Clerks	5	1,795	7,310 16	4 07
3. Other Clerks	36	13,233	28,045 16	2 12
4. Stenographers and Typists.	10	3,874	7,261 99	1 90
5. Telegraph and telephone Operators	.....	.....	.....	.....
6. Messengers and Attendants	.....	.....	.....	.....
7. Other General Office Employees	11	4,123	9,993 31	2 42
Total	69	25,338	68,721 40	2 72
II. *Road*:				
11. Officers	6	2,246	12,753 11	5 68
12. Clerks	11	3,707	9,334 86	2 52
13. Shop foremen	1	252	881 65	3 50
14. Structural iron workers	.....	.....	.....	.....
15. Machinists	.....	.....	.....	.....
16. Masons and bricklayers	.....	.....	.....	.....
17. Carpenters	22	5,843	16,835 21	2 88
18. Painters	4	793	2,188 88	2 68
19. Other M. W. S. shopmen	.....	.....	.....	.....
20. Other skilled laborers	4	803	2,171 28	2 70
21. Section foremen	50	16,265	43,538 95	2 68
22. Watchmen and trackwalkers	2	708	1,770 00	2 50
23. Other sectionmen	148	54,740	103,854 58	1 90
24. Unskilled laborers	.....	74	150 68	2 04
25. All other M. W. S. employees	19	6,054	13,241 09	2 19
26. Foremen of construction gangs	8	2,656	8,492 03	3 20
27. Other men in construction gangs	88	30,749	52,266 01	1 70
Total	363	124,890	267,418 33	2 14
III. *Equipment*:				
31. Officers	3	611	3,100 00	5 07
32. Clerks and attendants	3	1,916	4,901 84	2 56
33. Shop foremen	6	2,198	8,077 51	3 68
34. Machinists	18	5,384	19,915 25	3 70
35. Carpenters	19	5,206	16,437 88	3 16
36. Painters and upholsterers.	15	3,702	9,645 98	2 61
37. Other shopmen	86	23,091	52,426 24	2 27
38. Car inspectors	9	3,572	9,466 81	2 65
39. Watchmen	.....	.....	.....	.....
40. All other M. E. employees.	24	6,276	15,266 50	2 43
Total	183	51,956	139,238 01	2 68
IV. *Traffic*:				
51. Officers	1	365	2,380 00	6 52
52. Clerks and attendants	11	3,868	6,978 54	1 80
53. Travelling solicitors	.....	.....	.....	.....
54. Employees in outside agencies	.....	.....	.....	.....
55. All other traffic employees.	.....	.....	.....	.....
Total	12	4,233	9,358 54	2 21

Statement Showing Employees, Total Days Worked, Average Daily Compensation, Etc.—Continued.

November 1st, 1914, to October 31st, 1915.

Class.	No.	Total. days worked.	Total compensation.	Average daily compensation.
V. *Transportation*:				
71. Officers	3	1,095	7,060 00	6 45
72. Clerks and attendants	9	2,537	4,706 50	1 86
73. Despatchers	4	1,702	8,816 49	5 18
74. Station agents	27	10,784	34,063 16	3 16
75. Operators not agents	22	8,079	21,787 23	2 70
76. Other station employees	119	37,592	67,292 75	1 79
77. Yardmasters & yard clerks	18	6,056	11,772 24	1 94
78. Yard enginemen	6	3,451	12,032 40	3 49
79. Yard conductors and brakemen	9	4,880	18,042 39	3 70
80. Yard switchmen	.....	.....	.....	.....
81. Other yard employees	.....	.....	.....	.....
82. Enginehouse employees	30	10,849	24,419 37	2 25
83. Road enginemen and motormen	44	21,836	81,917 91	3 75
84. Passenger conductors	5	4,097	13,280 22	3 24
85. Freight conductors	14	6,034	26,350 01	4 37
86. Other road trainmen	43	23,034	57,560 62	2 50
87. Operators, interlockers and signals	.....	.....	.....	.....
88. Crossing flagmen and gatemen	.....	.....	.....	.....
89. Drawbridge operators	.....	.....	.....	.....
90. Employees on floating equipment	.....	.....	.....	.....
91. Employees in express service	.....	.....	.....	.....
92. Employees in claim dept.	.....	.....	.....	.....
93. All other trans. employees	36	11,209	21,783 52	1 94
Total	389	153,235	410,884 81	2 68
Grand Total	1,016	359,652	895,621 09	2 49
Outside operations	.....	2,622	5,077 63	1 94
Construction	143	23,494	52,510 69	2 24
Total payroll	1,159	385,768	953,209 41	2 47

STATEMENT OF WAGES PAID EMPLOYEES—YEAR ENDED OCTOBER 31st, 1915.

Office of Secretary-Treasurer.

McGee, A. J.	Secretary-Treasurer	$1,250 00	
Maund, W. H.	"	1,666 64	
Odlum, A. B.	Chief Clerk	925 00	
Downing, Miss A.	Stenographer	885 00	
McNeice, Miss H.	"	682 50	
Moore, Miss E.	"	495 00	
Southby, Miss G.	Filing Clerk	600 00	
Odlum, Miss R.	Stenographer	165 00	
Whiteside, W.	Mail Clerk	360 00	
			$7,029 14

Office of Accountant.

Macdonald, H. F.	Accountant	$1,155 00	
Gracey, T. J.	"	750 00	
Hamilton, D.	Assistant Accountant	1,290 00	
May, E. N.	Clerk	1,140 00	
Saunderson, C. S.	"	832 50	
Mack, R. F.	"	802 50	
Jones, R. V.	"	682 50	
Pratt, A. B.	"	1,800 00	
Hanan, H. P.	"	540 00	
Robinson, Miss S.	"	682 50	
Johnson, Miss G.	Stenographer	283 90	
			$9,958 90

Office of Mining Engineer, Cobalt, Ont.

Cole, A. A.	Mining Engineer	$3.400 00	
Tittensor, Miss E.	Stenographer	780 00	
			$4,180 00

Office of Superintendent of Traffic.

Griffin, W. A.	Supt of Traffic	$3,220 00	
Faught, S. J.	Chief Clerk	1,200 00	
Brown, C. F.	Stenographer	780 00	
Giroux, C. E.	Clerk	246 61	
Newell, M.	Stenographer	600 00	
Beaton, W. S.	Clerk	457 57	
Rodgers, E. W.	Office Boy	12 89	
Gregoire, T. E.	" "	42 74	
Ryan, S. H.	Trainmaster	2,040 00	
Gregory, K. E.	Stenographer	564 35	
Campbell, K.	Office Boy	120 16	
Bain, J.	Clerk	325 00	
Sherman, E. L.	"	275 00	
Jessup, A. L.	Stenographer	14 19	
Biers, B. W.	Clerk	5 83	
Brown, C. A.	Stenographer	27 00	
Faught, W. F.	Clerk	10 16	
Foley, P. S.	"	25 00	
			$9,966 50

Paymaster's Office.

Ferguson, C. L.	Paymaster	$2,200 00	
Cousineau, L. J.	Clerk	840 00	
			$3,040 00

Auditor and Car Accountant's Office.

Mitchell, R. H.	A. & C. A.	$2,270 00	
Willis, J. B.	C. Clk. and T. Auditor	1,310 00	
Teskey, H. W.	Chief Clerk	248 39	
McGee, H. H.	T. Auditor	1,430 00	
McCausland, J.	Clerk	660 00	
Brennan, J. B.	"	780 00	
Peel, R.	"	710 00	
Brockway, H.	"	830 00	
Lavery, T. H.	"	780 00	
Keeler, S.	"	720 00	
McKeown, G.	"	417 33	
Bertrim, E. D.	"	320 96	
Cartmill, C. H.	"	720 00	
Johnston, H.	"	445 16	
McEdward, W.	"	600 00	
Campbell, M.	"	480 00	
Murphy, C W.	"	519 68	
Fitzgerald, H.	Stenographer	619 90	
Ansell, H. V.	"	419 36	
Smith G.	Clerk	422 25	
Oulette, T.	"	338 71	
Doidge, M.	"	600 00	
McKeown, J.	"	47 00	
Gregory, K. E.	Stenographer	39 21	
Amos, D. G.	"	70 67	
Duncan, H.	Clerk	16 13	
Sheppard, B.	"	12 42	
Maund, W. H.	Trav. Auditor	580 00	
			$16,407 17

Superintendents' Accountant's Office.

Gracey, T. J.	Supt. Account.	$935 00	
Bain, J.	Clerk	455 00	
Sherman, E. L.	"	375 00	
McIntosh, R.	"	375 00	
Cavanagh, H.	"	305 00	
Bousquet, W.	"	210 00	
Jessup, A. L.	Stenographer	280 00	
			$2,935 00

Land Department.

Lee, G. W.	Comm'r. and General Agent	$2,619 14	
Bauldry, W. J.	Townsite Inspector	1,200 00	
Palmer, G. E.	Colonization Agent	1,000 00	
Laborers etc.		1,945 49	
Gregory, Miss T.	Stenographer	720 00	
			$7,484 63

General Freight and Passenger Agent.

Parr, A. J.	G. F. & P. A.	$2,380 00	
Harper, W. J.	Chief Clerk	1,560 00	
Thomas, D. R.	Clerk	160 00	
Jones, W.	"	710 00	
Kelly, T.	"	590 00	
Milligan, M.	Stenographer	590 00	
Banks, E. C.	Clerk	1,020 00	
McLeod, R. C.	"	410 00	
Crummy, M.	Stenographer	530 00	
Gauthier, J.	Clerk	350 00	
Casey, M.	Stenographer	480 00	
McGill R.	Office Boy	215 32	
Anderson, F. R.	Stenographer	338 22	
Burritt, W.	Office Boy	25 00	
			$9,358 54

Train Despatchers.

Lamb, R. L.	Chief Despatcher	$2,220 00	
Chatterton, C. D.	Despatcher	2,166 24	
Workman, R.	"	2,063 50	
Smith, R. B.	"	179 27	
Trowhill, R. T.	"	1,830 19	
LeGallais, F. G.	Operator and Despatcher	1,043 73	
Schmallback, J. H.	Operator	6 13	
Harper, R.	"	7 66	
Shane, J. T.	"	33 71	
Clark, M. G.	"	6 13	
Middlemiss, W. H.	"	42 90	
			$9,599 46

Purchasing and Stores Department.

Graham, W. A.	Pur. Agent & S. Keeper	$2,400 00	
Alford, G. B.	C. Clerk	1,260 00	
Freeman, A.	Clerk	1,080 00	
Tarsey, S. G.	"	804 00	
Valliant, E. R.	"	720 00	
Donegan, E. J.	Stenographer	720 00	
Sale, A.	"	616 45	
Sale, T. M.	Foreman	1,260 00	
Dignan, J. C.	Storeman	756 00	
Depledge, F.	"	756 00	
Daly, G. L.	"	660 00	
Bigg, J. E.	"	600 00	
Cavanagh, A.	Inspector	1,097 76	
English, W.	"	1,014 00	
Polk, V. K.	Stenographer	131 29	
McManus, J.	Yard Foreman	222 00	
Couch, A.	Laborer	146 30	
Watkin, W.	Storekeeper	1,056 00	
			$15,299 80

Official Cars.

Brewster, L.	Porter	$780 00	
Dawson, R.	"	9 67	
West, S.	"	76 80	
Scott, J. A.	"	10 00	
Carriere, G.	"	8 00	
Mosley, O.	"	16 33	
Taylor, W.	"	6 29	
St. John, P.	"	4 51	
Monette, A. B.	"	186 61	
Bowman, W. H.	"	13 55	
			$1,111 76

Janitor, Office Building.

Hume, J.	Janitor	$840 00	
			$840 00

Constables.

Swan, R.	Constable	$960 00	
Ridler, C.	"	325 00	
Bowman, J. H.	"	167 74	
			$1,452 74

Freight Office, North Bay.

Baker, C. O.	Agent	$1,720 00
Teskey, H. W.	Chief Clerk	881 39
King, A. T.	Cashier	864 84

Freight Office, North Bay.—Continued.

Knapp, E. A.	Accountant	780 00	
Forrest, W. Sr.	Accountant	780 00	
Sullivan, M. J.	Clerk	732 41	
Fishlock, E. F.	Biller	60 00	
Gerrie, M.	Clerk	664 67	
Kemp, G.	Clerk	619 19	
Nugent, P.	Stenographer	632 50	
Gibson, R.	Clerk	659 19	
Forrest, W. Jr.	Clerk	384 83	
Lapointe, H.	Messenger	324 18	
Chappelle, M.	Stenographer	27 50	
McGillis, A	Messenger	48 38	
Thompson, J. C.	Clerk	55 00	
Gallagher, J. A.	"	39 03	
Fetterly, U. A.	"	9 03	
			$9,282 14

Freight Shed, North Bay.

Sharvell, F. W.	Foreman	$1,020 00	
Ashford, S.	Timekeeper	744 00	
Dugard, W.	Checker	744 00	
Moulder, T.	"	696 77	
Rogers, A.	"	744 00	
Smith, A.	"	690 39	
White, R.	"	110 00	
Webber, S.	"	744 00	
Freight Truckers and Porters		14,077 53	
			$19,570 69

Yard Office, North Bay.

McKerrow, J. O.	Yardmaster	$1,559 57	
Ness, C.	"	1,661 32	
Richmond, J. N.	"	328 90	
Schmallback, J. H.	Operator	336 40	
Roberts, C. A.	"	1,190 08	
Dwyer, J. H.	"	1,207 35	
LeGallais, F. G.	"	282 24	
Deagle, L. A.	"	57 57	
Harper, R.	"	22 76	
Dudley, H. A.	"	516 20	
Thompson, W.	Chief Clerk	900 00	
Wissler, J. S.	Clerk	780 00	
Wright, W. T.	"	720 00	
Saunders, L.	"	460 64	
Duncan, G.	"	665 89	
Gartner, H.	"	96 45	
Elston, F.	"	681 93	
Howard, J. E.	"	587 01	
Chamberlain, S.	"	560 40	
Daly, R. L.	"	390 05	
Fetterly, U.	Call Boy	377 86	
Edwards, R.	"	139 68	
Campbell, K.	"	153 72	
Vanreith, A.	Janitor	240 00	
Prou, A.	Signalman	450 84	
Cramp, A.	"	441 80	
Fleury, G.	"	9 16	
Dyer, J. H.	Clerk	108 81	
Lapointe, E.	Messenger	240 38	
McGillis, A.	"	10 69	
Chase, H. F.	Signalman	5 32	
Veshinskin, L.	Sanitary Work	1 50	
Natook, E.	"	1 50	
Brigginshaw, W.	"	1 50	

Yard Office, North Bay.—Continued.

Fitzsimmons T.	Sanitary Work	7 75	
Pugh, A.	"	3 00	
Tompkins, F.	"	1 50	
Thompson, J.	Clerk	338 57	
Lett, A.	Messenger	81	
Archambault, O.	Call Boy	240 37	
Beemer, F. B.	Operator	17 40	
Oulette, A	"	37 48	
Archambault, O. A.	Call Boy	103 87	
Brown, D.	Messenger	7 25	
Gall, A.	Sanitary Work	1 50	
Clark, M. G.	Operator	126 87	
Hogarth, J. C.	"	16 33	
Thom, W.	Clerk	66 13	
Edey, J.	Messenger	18 55	
Samler, W.	Clerk	22 58	
Donegan, J. C.	"	20 97	
Aubrey, H. F.	Signalman	9 76	
			$16,228 21

Widdifield Station.

Picard, J. W.	Agent	$735 36	
Vanmeer, E. W.	Relvg. Agent	15 09	
Deagle, L. A.	"	229 49	
			$979 94

Tomiko Station.

Smith, A. J.	Agent	$956 79	
Vanmeer, E. W.	Relvg. Agent	298 07	
Shankman, S.	Operator	35 47	
Vanmeer, E. W.	"	112 79	
Shane, J. T.	"	269 94	
Hainer, J. R.	"	159 23	
Brasher, S. M.	"	83 82	
			$1,916 11

Diver Station.

Baker, T. J.	Agent	$964 65	
Clark, M. G.	Relvg. Agent	36 06	
			$1,000 71

Temagami Station.

Allan, J. D.	Agent	$827 76	
Picard, J. W.	"	253 98	
Beemer, F. B.	Relvg. Agent	110 97	
York, W. H.	Baggageman	183 33	
			$1,376 04

Latchford Station.

Richardson, R.	Agent	$1,254 55	
Clark, M. G.	Relvg. Agent	52 24	
Pelkie, J. A.	Operator	338 44	
Brasher, S. M.	"	65 90	
Brown, H. G.	"	577 05	
Jamieson, W. J.	Sanitary Work	4 00	
			$2,292 18

Gillies Depot Station.

Hawkins, J. A.	Agent	$331 44	
Pelkie, J. A.	"	169 73	
			$501 17

Cobalt Station.

Way, D. H.	Agent	$1,620 00	
Maund, F. C.	Clerk	560 00	
Nixon, E.	"	900 00	
Skillicorn, H.	Cashier	847 16	
Kilpatrick, W. A.	Clerk	180 00	
Stuckey, H.	"	726 33	
Downard, F.	"	540 00	
Stuckey, E. D.	"	209 03	
O'Kelly, A.	Stenographer	720 00	
Earle, W. R.	Operator	1,250 25	
Beemer, F. B.	"	83 22	
Carter, W.	Clerk	516 00	
Whitehead, H.	Baggageman	827 09	
Davis, A. B.	Constable	35 00	
Sweetman, W.	"	158 55	
Skelton, F. W.	"	167 74	
Bowman, J. H.	"	659 35	
Williams, B. G.	"	88 06	
Bartlett, M.	Janitress	461 93	
McKay, D.	Shed Foreman	792 50	
Dodds, R.	Checker	375 48	
Bywaters, H.	"	720 00	
Bell, R.	"	723 00	
Monkhouse, T.	"	660 00	
Way, V. L.	Clerk	330 97	
Cripp, E.	"	186 76	
Borland, A.	"	69 66	
Mercier, A.	Sanitary Work	72 00	
Fisher, W.	Janitor	22 58	
			$14,502 66

North Cobalt Station.

Gibbon, G.	Agent	$913 00	
Hawkins, J. A.	"	83 00	
Pelkie, J. A.	Relvg. Agent	10 45	
Hainer, J. R.	"	41 00	
O'Brien, H.	Sanitary Work	18 00	
			$1,065 45

Haileybury Station.

Shibley, J. H.	Agent	$1,573 75	
Trousdale, F.	Operator	1,021 29	
Beemer, F. B.	"	69 84	
Copner, J. M.	Chief Clerk	810 34	
White, G.	Baggageman	810 00	
Duffet, I. D.	Shed Foreman	758 89	
Harris, J. B.	Clerk	671 83	
Shibley, E. M.	"	518 87	
Graham, B. I.	"	21 00	
McKenzie, E.	"	43 64	
Spence, C. M.	Cleaning	15 00	
			$6,314 45

New Liskeard Station.

Goodman, E. M.	Agent	$1,620 00	
Holt, F. G.	Operator	965 75	
Murphy, E. M.	"	891 65	
Schmallback, J. H.	"	26 45	
Hainer, J. R.	"	31 44	
Milne, W. B.	Cashier	863 34	
Herron, F.	Clerk	720 00	
Brown, R.	Baggageman	528 71	
Ramsay, W. J.	Shed Foreman	706 00	

New Liskeard Station.—Continued.

Cragg, F.	Checker	521 08	
Haggart, E. W.	"	318 59	
McFee, G.	Messenger	2 95	
Brown, W.	Baggageman	35 81	
			$7,231 77

Uno Park Station

Doherty, M. R.	Agent	$953 55	
Brasher, S. M.	Relieving Agent	24 40	
Beemer, F. B.	"	38 74	
			$1,016 69

Thornloe Station.

Caldwell, W. H.	Agent	$943 60	
			$943 60

Earlton Station.

Buchanan, L.	Agent	$1,057 04	
Brasher, S. M.	Relieving Agent	118 45	
Mortson, N. E.	Clerk	280 00	
Gregor, L.	"	302 42	
Cater, F.	"	5 00	
McMinn, R. D.	"	25 81	
Yandeau, J.	Sanitary Work	5 00	
Silver, L.	"	12 00	
			$1,805 72

Elk Lake Station.

Belanger, O.	Agent	$1,203 27	
Aubert, B.	Clerk	198 21	
Champagne, L.	Trucker	1 00	
Staniski, Mrs. T.	Janitress	60 00	
Staniski, T.	Sanitary Work	24 00	
			$1,486 48

Heaslip Station.

Chouinard, J.	Agent	$946 68	
Hainer, J. R.	Relieving Agent	54 40	
			$1,001 08

Englehart Station.

Murray, F. J.	Agent	$1,309 23	
Borthwick, T. D.	Operator	1,282 55	
Schmallback, J. H.	"	127 95	
Bruce, G.	"	1,333 44	
Beemer, F. B.	"	82 58	
Jones, C. S.	Clerk	708 93	
Errett, F. A.	Baggageman	630 72	
Nudds, T.	Checker	650 16	
Grey, S. C.	Shed Foreman	703 09	
Grey, E. A.	Trucker	578 87	
Tibbles, J.	"	550 79	
Millman, A. E.	Callboy	130 83	
Soper, W.	Checker	476 02	
Plumb, S.	Trucker	73 54	
Vreeland, E.	"	7 66	
Rodeman, W.	"	1 53	
Ranstead, T.	"	4 60	
Murray, C.	"	83 92	
Fox, G.	"	49 29	
Hackford, H.	Sanitary Work	10 00	
			$8,795 70

Charlton Station.

Brocklebank, C. H.	Agent	$972 69	
Vanmeer, E. W.	Relieving Agent	72 00	
Hill, A.	Clerk	125 00	
Kennedy, A.	"	10 48	
Hall, H.	Sanitary Work	4 00	
			$1,184 17

Dane Station.

Marshall, C. E.	Agent	$926 92	
Brasher, S. M.	Relieving Agent	40 69	
Varrett, E. J.	"	7 31	
Hainer, J. R.	"	42 65	
			$1,017 57

Swastika Station.

Brennan, W. W.	Agent	$1,021 92	
Clark, M. G.	Relieving Agent	116 19	
Furlong, A.	Telephone Operator	397 42	
Dunn, N.	" "	22 58	
Shane, J. T.	Clerk	6 67	
Boivin, A.	"	19 35	
Wright, W.	"	165 48	
Webber, W. S.	"	30 65	
			$1,780 26

Bourkes Station.

Middlemiss, W. H.	Operator	$118 99	
Hainer, J. R.	"	29 10	
			$148 09

Matheson Station.

Ackerman, T. R.	Agent	$1,369 03	
Clark, M. G.	Relieving Agent	67 06	
Holland, F. G.	Clerk	117 74	
Burton, W. A.	"	37 61	
Ginn, J. A.	"	444 64	
Whitehead, P.	Checker	30 91	
Brown, Mrs.	Cleaning	35 00	
Wilson, E.	"	59 35	
McChristie, A.	Sanitary Work	11 00	
			$2,172 34

Porquis Jct. Station.

Beemer, F. B.	Agent	$35 12	
Walker, J.	"	493 96	
Brasher, S. M.	"	643 56	
Harper, R.	Operator	18 21	
Shane, J. T.	"	26 32	
Deagle, L. A.	"	209 97	
Brown, H. G.	"	6 58	
Vanmeer, E. W.	"	41 14	
Pelkie, J. A.	"	401 36	
Hainer, J. T.	"	41 48	
Mortson, N. E.	Clerk	309 77	
Gregor, L. D.	"	298 83	
Sullivan, R.	"	72 74	
Burgess, H. A.	"	70 80	
McConomy, J. A.	"	169 35	
Boissey, W. H.	"	31 93	
Knapp, F.	Baggageman	682 58	
Hopkins, N.	Telephone Operator	385 00	
Ludford, L.	" "	35 00	
Jensen, Mrs.	Cleaning	22 42	
			$3,996 12

Iroquois Falls Station.

Sherlock, G. L.	Agent	$714 84	
Mitchell, A. B.	Clerk and Agent	801 66	
Jardine, A.	Operator	893 50	
Middlemiss, W. H.	"	41 95	
Gregor, M.	Clerk	25 16	
Hunter, I. L.	"	24 19	
Bridger, E. H.	"	37 26	
Shane, J. T.	"	103 56	
Gregor, L. D.	"	645 33	
Fulton, G. V.	"	470 16	
Wright, W.	"	250 72	
Johnston, J.	Baggageman	230 64	
Odzello, D.	Sanitary Work	10 80	
Babuk, G.	"	2 25	
Johnston, C.	"	94 66	
Mourassa, M.	"	10 00	
Shipley, C. M.	Clerk	122 42	
			$4,479 10

Porcupine Station.

Price, J. T.	Agent	$1,233 72	
Clark, M. G.	Relieving Agent	48 45	
Vanmeer, E. W.	Operator	87 74	
Tremblay, P.	Sanitary Work	8 00	
			$1,377 91

South Porcupine Station.

Varrett, E. J.	Agent	$1,456 93	
Cattley, B.	Operator	1,122 50	
Clark, M. G.	"	74 92	
Shankman, S.	Operator and Baggageman	401 97	
Humphrey, C.	Shedman	720 00	
Moore, G.	Clerk	660 00	
Howey, N.	"	107 50	
McLeod, R.	"	193 39	
Devine, T.	Messenger	75 00	
Tremblay, P.	Sanitary Work	12 00	
			$4,824 21

Schumacher Station.

Hawkins, J. A.	Agent	$804 50	
Ritza, A. C.	"	442 72	
Brown, H. G.	Operator	260 70	
Deagle, L. A.	"	45 75	
Shankman, S.	"	36 08	
Ostrosser, H. P.	Clerk	32 25	
Hawkins, R.	"	117 42	
Depippo, F.	Sanitary Work	5 00	
			$1,744 42

Timmins Station.

Allan, J. D.	Agent	$364 51	
Cullen, H. B.	"	900 00	
Clark, M. G.	Operator	468 13	
Barnett, J. H.	"	594 69	
Shane, J. T.	"	92 51	
Schmallback, J. H.	"	389 05	
Shankman, S.	"	264 56	
Fulton, G. V.	Clerk	112 74	
Spiers, J. C.	"	501 77	
Woodward, W.	"	49 67	
Boivin, F.	"	17 52	

Timmins Station.—Continued.

Brown, M.	Clerk	453 29	
Bridger, E. H.	"	94 98	
Burton, W. A.	Cashier	555 33	
Griffiths, G.	Checker	5 42	
Sproule, R.	"	29 25	
McGirr, W.	"	17 82	
Germyn, C. V.	"	65 00	
Gord, L.	Sanitary Work	10 00	
Bardwell, R.	Messenger	300 00	
			$5,286 24

Nushka Station.

Vanmeer, E. W.	Agent	$287 54	
			$287 54

Cochrane Station.

Daly, R. W.	Agent	$1,350 00	
Brown, A. W.	Operator	1,035 18	
Robinson, E.	"	935 58	
Dudley, H. A.	"	133 96	
Hogarth, J. C.	"	8 77	
Bernier, J. A.	Cashier	900 00	
Mortson, R. C.	Clerk	840 00	
Drinkwater, L.	Shed Foreman	729 10	
Claremont, S. J.	Trucker	55 00	
Dunn, C.	"	4 00	
Drinkwater, B.	"	144 62	
Belliveau, J.	"	146 52	
Milligan, B.	Clerk	41 94	
Williams, R.	Baggageman	660 00	
Sproule, R.	Shed Foreman	65 00	
Jessup, A. L.	Stenographer	63 33	
Gertin, M.	"	24 00	
Bogue, B.	Janitor	2 00	
Johnston, F.	"	718 00	
Kert, H.	Messenger	360 00	
			$8,217 00

Shelter Stations.

Daly, J.	Attendant	$60 00	
Fordyce, G.	"	60 00	
Schlievert, G.	"	120 00	
Johnson, O.	"	60 00	
Goodfellow, Mrs. R.	"	25 00	
Labelle, F.	"	60 00	
Harbridge, Mrs. L.	"	35 00	
Wickstead, A.	"	17 50	
Burnett, W.	"	35 00	
Hoffman, Mrs.	"	25 00	
Mitchell, J. B.	"	6 77	
			$504 27

Conductors.

Nidd, J. T.	Conductor	$1,484 71
Newell, A.	"	1,661 07
Murray, P. J.	"	1,569 35
Graham, H. F.	"	1,597 84
McParland, T. J.	"	1579 70
Hamilton, T. H.	"	1,660 95
Gillespie, J.	"	1,744 93
Sheppard, E. E.	"	1,779 19
Jessup, J. H.	"	1,608 47

Conductors.—Continued.

McTavish, R.	Conductor		1,483 77	
Reesor, A. P.	"		1,376 45	
Cockerline, J.	"		1,238 25	
McKerrow, G.	"		1,854 34	
Miller, A.	"		1,631 44	
Lillie, O.	"		1,541 74	
Nixon, W.	"		1,575 48	
Rouble, A.	"		1,476 11	
Sullivan, H.	"		1,539 58	
Thomas, H.	"		1,478 13	
McConomy, E. J.	"		1,581 82	
Connell, J. S.	"		869 05	
Beaudet, J. A.	"		487 56	
Cunning, J. H.	"		669 59	
Stoughton, N.	"		1,140 81	
Bourette, J. W.	"		1,210 19	
Chambers, A. J.	"		769 44	
Steinhoff, J. A.	"		1,416 16	
Loney, W.	"		959 98	
Kennedy, J.	"		132 78	
Miller, J. S.	"		752 62	
Campbell, W. A.	"		298 88	
Atkinson, H. W.	"		1,296 65	
Aubrey, N.	"		1,265 02	
Bradford, J. N.	"		1,428 60	
Archer, H. A.	"		840 83	
Willoughby, J. A.	"		193 44	
Dubois, C. H.	"		37 60	
Simpkins, W.	"		4 80	
St. Louis, F.	"		27 13	
Richmond, J. N.	"		88 08	
Treacy, W. L.	"		377 40	
McDonald, A.	"		249 24	
Taylor, W. H.	"		475 98	
King, A.	"		68 80	
King, E. J.	"		31 98	
Copps, R. W.	"		27 76	
Ryan, H.	"		74 69	
Kennedy, J.	"		96 42	
Leckie, J. W.	"		225 52	
Flegg, R.	"		707 53	
Kerr, C. D.	"		25 00	
				$47,712 85

Brakemen.

Lee, G.	Brakeman		$943 08	
Shepherd, E. C.	"		897 97	
McQuestion, W. A.	"		1,011 57	
Edwards, A. S.	"		997 78	
Downey, M. J.	"		1,041 28	
Coburn, G.	"		1,000 39	
Cockerline, A. S.	"		968 10	
Thurlow, J.	"		1,039 64	
Aubrey, H. J.	"		997 86	
Potter, S. G.	"		290 48	
Durack, D. B.	"		1,115 93	
Winters, R.	"		1,135 33	
Francis, S. F.	"		1,184 02	
Robinson, E.	"		1,007 48	
Holland, J.	"		1,132 11	
Lett, W.	"		1,125 05	
McDonald, A.	"		972 78	
Ryan, H.	"		961 44	
Edwards, W. J.	"		1,109 99	
Manning, W.	"		1,071 09	

Brakemen.—Continued.

Sullivan, K.	Brakeman		1,043 18
Ferrier, G.	"		1,100 73
Fleming, R.	"		1,033 36
Dougherty, T. J.	"		985 76
Dorschmer, A.	"		1,310 38
Fisher, R.	"		932,82
Bailey, J.	"		989 67
Copps, R. W.	"		1,364 25
McLeod, J.	"		880 75
Gauthier, A.	"		1,088 44
Clark, C.	"		1,122 74
James, R.	"		747 94
Farmer, A.	"		1,065 15
Farmer, W.	"		1,012 90
Seguin, W. J.	"		1,016 74
Pigeau, E. J.	"		880 68
McAughey, T. J.	"		914 80
Tetreau, E.	"		1,289,86
Scott, E. J.	"		948 88
Kelly, H.	"		993 20
Kerr, C. D.	"		1,055 73
McCallum, F.	"		994 21
Allan, J.	"		887 67
Chambers, W. H.	"		853 12
Kennedy, J.	"		977 78
Saunders, F. A.	"		671 11
Wallace, F.	"		426 62
Larone, A. T.	"		970 91
Spencer, W. L.	"		1,229 33
Fraser, E.	"		1,047 64
Jewell, J. D.	"		960 56
St. Louis, F.	"		1,083 33
Stoughton, F.	"		635 33
McCaughan, L.	"		470 60
Kilroy, B.	"		467 47
McMillan, R. J.	"		893 07
Gatacre, G.	"		977 98
Thompson, W. G.	"		463 72
Barrett, P. J.	"		402 23
O'Hara, J.	"		391 45
Chase, H. F.	"		392 20
Biers, B. W.	"		400 47
McKenzie, A. L.	"		66 25
Hutchinson, W. W.	"		76 89
Campbell, T. J.	"		542 90
Ryan, W. C.	"		806 68
Dyer, C.	"		17 20
Bradford, E. E.	"		39 65
Fleury, G.	"		240 76
Leckie, J. W.	"		877 14
Hickey, W.	"		52 88
Collins, P. J.	"		204 93
Beaudet, J. A.	"		718 30
Miller, J. S.	"		555 32
Wagner, H.	"		24 69
Treacy, W. L.	"		1,086 23
King, A. W.	"		1,120 48
Dubois, C. H.	"		1,209 07
Simpkins, W.	"		282 21
King, E. J.	"		930 17
Richmond, J. N.	"		1,037 73
Willoughby, J. A.	"		802 20
Stoughton, N.	"		320 66
Taylor, W. H.	"		128 10
Campbell, W. A.	"		784 05
Barrett, P. J.	"		14 48

Brakemen.—Continued.

Chambers, A. J.	Brakeman		579 19	
Cramp, A.	"		90 24	
Connell, J. S.	"		426 64	
Loney, W.	"		65 97	
Cunning, J. H.	"		112 20	
Atkinson, H.	"		87 50	
Archer, H. A.	"		427 00	
Bourette, J. W.	"		244 60	
O'Toole, G.	"		69 61	
Foster, F.	"		34 61	
Pringle, N.	"		25 47	
Pringle, G.	"		8 88	
Comerford, D. F.	"		34 77	
Simms, P.	"		12 96	
Taylor, T. H.	"		9 73	
				$71,546 47

Engineers.

Morgan, F.	Engineer		$1,820 61	
Shaw, L. G.	"		1,795 50	
Donohue, J.	"		1,882 82	
Smith, D.	"		1,618 99	
Fry, J.	"		1,636 50	
McLeod, A.	"		1,537 78	
Coomb, G.	"		1,991 94	
Thomas, W.	"		1,931 62	
Millman, W. C.	"		1,721 35	
Wilson, J. T.	"		1,880 88	
McKaig, S. J.	"		1,437 23	
McMillan, N.	"		2,174 57	
Currie, N.	"		1,719 70	
Copeland, J. E.	"		1,482 38	
Hill, T. H.	"		1,909 41	
Johnston, J. C.	"		1,474 67	
Ross, W.	"		1,960 76	
Holland, J.	"		1,522 49	
Newman, A.	"		1,517 59	
Ward, A.	"		1,634 36	
McElhaney, H.	"		1,778 57	
Thomas, F.	"		1,621 55	
Lackie, S.	"		1,719 65	
Filiatrault, Z. E.	"		1,592 75	
Plaus, W.	"		1,840 02	
Nornabell, E. A.	"		1,622 61	
Kirk, F. G.	"		1,656 75	
Langlois, J. C.	"		1,291 55	
Nolan, P. B.	"		1,867 32	
Howard, T.	"		1,576 78	
Durkin, J. T.	"		1,212 00	
McKenzie, H. W.	"		1,300 51	
Leishman, E. G.	"		535 99	
Bedard, S.	"		1,057 79	
Morris, J.	"		879 86	
Hermeston, H.	"		547 79	
McGovern, H. E.	"		1,031 67	
Biggs, J.	"		153 40	
Connell, W. D.	"		276 40	
Newman, S. B.	"		10 28	
McKerrow, J. E.	"		348 18	
Johnston, J. A.	"		944 18	
McEwan, S.	"		9 79	
Reynolds, H.	"		98 69	
Jackson, I.	"		21 53	
				$59,646 76

Firemen.

Connell, W. D.	Fireman		$1,074 82
Bedard, S.	"		576 77
Biggs, J.	"		1,031 55
Newman, S. B.	"		885 85
Jackson, I.	"		1,245 60
McElhaney, A.	"		1,184 92
McMenemy, A.	"		1,173 85
Vincent, R.	"		1,230 10
Moore, A.	"		1,093 72
Lewis, H.	"		1,146 76
McEwan, S.	"		1,096 32
McKenzie, A. B.	"		1,126 06
Jarvis, R.	"		133 27
Doyle, P. J.	"		417 30
Biers, G.	"		1,074 58
Beauchamp, H.	"		1,197 12
Muldoon, T.	"		1,198 77
Anyan, G. W.	"		1,013 90
Yorkston, J.	"		1,162 28
Woollings, T.	"		758 74
Vreeland, C.	"		1,038 96
Savard, E.	"		353 65
Phinney, J.	"		75 32
Grant, A.	"		771 03
McKinney, A.	"		913 21
Byers, P.	"		807 96
Dod, J.	"		800 17
Anderson, J.	"		672 97
Brooks, G.	"		1,093 10
Smith, D.	"		909 82
Radford, A.	"		1,045 68
Gentile, A.	"		1,175 99
Kelly, H.	"		843 21
Hayman, C.	"		351 65
Palmer, J.	"		359 72
Gould, R.	"		12 78
Hermeston, H.	"		657 33
Tripp, G.	"		1,213 25
Nudds, G.	"		1,092 41
Brooks, S.	"		3 82
Leeson, C.	"		14 98
Gard, W. I.	"		11 96
McKerrow, J. E.	"		733 60
McLeod, J.	"		997 78
Vernon, A.	"		274 32
McDonald, M. J.	"		66 35
Merritt, L.	"		109 92
McGovern, H. E.	"		378 26
McKenzie, H. W.	"		314 05
Anyan, H.	"		20 78
Leishman, E. G.	"		681 26
Tignanelli, F.	"		9 17
Pringle, N.	"		6 45
Kay, G.	"		59 14
Logan, T.	"		54 99
Thompson, H.	"		4 64
McDonald, T.	"		3 22
Stonehouse, E.	"		16 14
Davis, S.	"		3 22
James, T.	"		3 22
			$37,777 76

Telephone and Telegraph Department.

Kelly, W. J.	Superintendent	$1,800 00
Brown, C. A.	Stenographer	45 00
Ferguson, L. M.	Line Foreman	1,080 00

Telephone and Telegraph Department.—Continued.

Picard, P.	Lineman	965 03	
Boyer, J.	"	80 04	
Simpson, G.	"	968 00	
Loisel, S.	"	960 00	
Other Linemen		1,578 24	
			$7,476 31

Commercial Telegraph Office, Cobalt.

Way, D. H.	Manager	$180 00	
Bunyan, M.	Accountant	784 67	
Grace, P. W.	Operator	959 99	
Phillips, M.	"	24 16	
Anson, T.	Messenger	215 64	
Way, V. K.	"	4 51	
Simpkins, W. M.	"	142 74	
			$2,311 71

Elk Lake—Gowganda Telephone Line.

Belanger, O.	Manager	$180 00	
Tremblay, E.	Operator	420 00	
Taylor, E. L.	"	160 00	
Craig, W. H.	"	245 00	
Sullivan, N. L.	Lineman	900 00	
Aubert, B. R.	"	12 00	
			$1,917 00

Commercial Telegraph Office, Cochrane.

Daly, R. W.	Manager	$5 81	
Hann, H. C.	Operator	33 87	
			$39 68

Office of C. E. and S. of M.

Clement, S. B.	C. E. & S. of M.	$4,120 00	
Dickson, G. H.	Chief Draughtsman	1,680 00	
McRoberts, A. A.	Draughtsman	1,140 00	
Johnston, W. I.	Chief Clerk	1,500 00	
Morgan, N. L.	Stenographer	660 00	
Lemieux, G. E.	"	445 64	
Huntington, R. S.	Blueprinter	530 00	
Anderson, F.	Stenographer	24 10	
McIntosh, J. R.	Clerk	275 00	
Cavanagh, H. W.	"	225 00	
Jessup, A. L.	Stenographer	64 89	
Duncan, A. G.	"	20 06	
Young, J.	Clerk	75 00	
			$10,759 69

Greenhouse, Englehart.

Kerrigan, D.	Gardener	$840 00	
Ward, W. A.	Assistant Gardener	240 00	
Stansberry, S. H.	"	155 10	
Laborers		1,475 70	
			$2,710 80

Office of Master Mechanic.

Ross, T.	Master Mechanic	$2,100 00	
Battley, C.	A. B. Inspector	1,500 00	
Rodgers, H. L.	Mechanical Draughtsman	1,480 00	
Sale, H.	Draughtsman	998 06	
Ellwood, R.	Chief Clerk	1,020 00	
Raymond, J. C.	Stenographer	660 00	
Leppan, F.	Office Boy	300 00	
Douglass, J.	Road Foreman	1,800 00	
			$9,858 06

Motive Power Department, North Bay.

Black, W. J.	Foreman	$1,397 56	
Vanstone, A.	"	229 51	
Machinists		17,569 85	
Carpenters		1,526 96	
Painters		575 15	
Other shopmen		43,883 12	
			$65,182 15

Car Department, North Bay.

Beath, J.	Foreman	$1,200 00	
Carpenters		3,875 58	
Other shopmen		23,542 04	
			$28,617 62

Carpenter Shop, North Bay.

Williamson, R.	Foreman	$1,440 00	
Carpenters		11,110 96	
Painters		8,763 31	
Other shopmen		8,508 08	
			$29,822 35

M. P. and Car Department, Cobalt.

Sibbald, T.	Car Inspector	$1,057 08	
			$1,057 08

M. P. and Car Department, Elk Lake.

Other shopmen		$1,868 88	
			$1,868 88

M. P. and Car Department, Englehart.

Clarke, R.	Foreman	$1,352 00	
Verner, W.	"	88 00	
Machinists		2,447 30	
Other shopmen		16,789 90	
			$20,677 20

M. P. and Car Department, Iroquois Falls.

Other shopmen		$1,590 72	
			$1,590 72

M. P. and Car Department, Timmins.

Thompson, E.	Foreman	$1,180 00	
Machinists		23 49	
Other shopmen		7,099 48	
			$8,302 97

M. P. and Car Department, Cochrane.

Moth, A. T.	Foreman	$1,200 00	
Machinists		142 80	
Other shopmen		8,569 03	
			$9,911 83

Resident Engineer and Staff.

Boast, R. G.	Resident Engineer	$1,560 00	
Instrument men, etc.		4,775 39	
			$6,335 39

Locating Engineer and Staff.

Maher, W. R.	Locating Engineer	$1,550 00	
Others		490 48	
			$2,040 48

Office of B. and B. Master.

Oldham, W. J.	B. and B. Master	$1,800 00	
Stafford, E. J.	Clerk	960 00	
			$2,760 00

B. and B. Department, Water Service.

Bland, R.	Inspector	$400 00	
Day, H.	"	560 00	
Others		7,241 86	
			$8,201 86

B. and B. Department, Extra Gangs.

Carpenters	$25,636 35	
Others	15,828 55	
		$41,464 90

Office of General Roadmaster.

Young, Wm.	General Roadmaster	$1,920 00	
Young, J.	Clerk	825 00	
Jacobs, G. E.	Stenographer	720 00	
			$3,465 00

Track Supervisors.

Switzer, W.	Supervisor	$233 11	
Faught, S. J.	"	1,560 00	
Drinkwater, J.	"	1,560 00	
Ferguson, A. C.	Clerk	286 00	
			$3,639 11

Section Gangs.

Section No. 1	Foreman	$930 41	
	Laborers	8,173 78	
" 2	Foreman	828 65	
	Laborers	1,791 63	
" 3	Foreman	844 00	
	Laborers	1,911 81	
" 4	Foreman	830 19	
	Laborers	1,489 22	
" 5	Foreman	847 98	
	Laborers	1,577 76	
" 6	Foreman	841 09	
	Laborers	1,527 69	
" 7	Foreman	841 34	
	Laborers	1,576 27	
" 8	Foreman	830 22	
	Laborers	1,583 30	
" 9	Foreman	832 07	
	Laborers	1,558 15	
" 10	Foreman	834 18	
	Laborers	1,531 50	
" 11	Foreman	870 86	
	Laborers	1,860 34	
" 12	Foreman	825 97	
	Laborers	1,922 22	
" 13	Foreman	832 21	
	Laborers	1,896 96	

Section Gangs.—Continued.

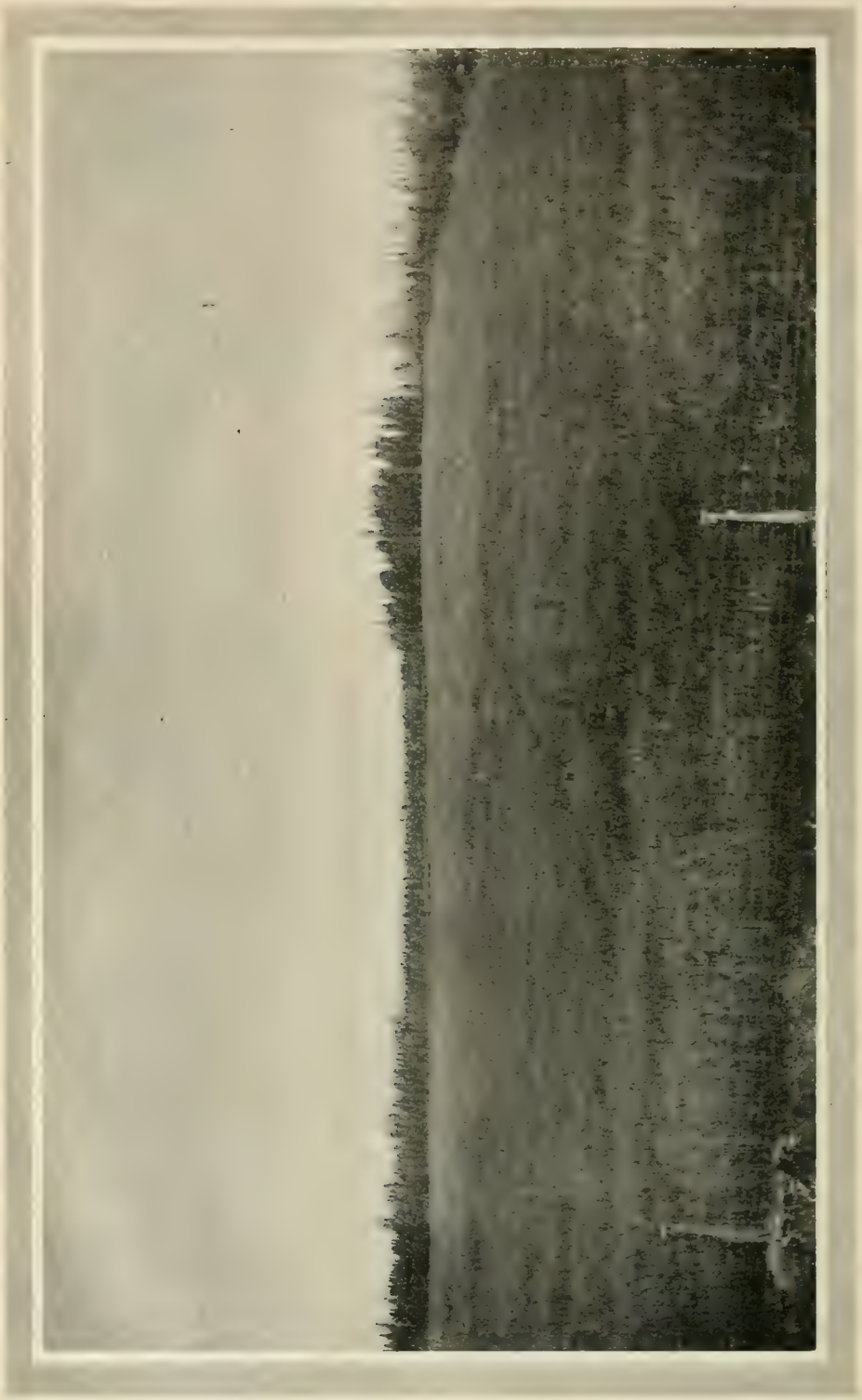
Section No. 14	Foreman		843 15
	Laborers		1,876 15
" 15	Foreman		859 34
	Laborers		2,140 40
" 16	Foreman		860 98
	Laborers		1,524 56
" 17	Foreman		853 87
	Laborers		3,183 91
" 18	Foreman		883 28
	Laborers		2,080 19
" 19	Foreman		953 84
	Laborers		2,313 53
" 20	Foreman		827 59
	Laborers		1,662 89
" 21	Foreman		827 06
	Laborers		1,601 93
" 22	Foreman		878 57
	Laborers		1,837 92
" 23	Foreman		1,542 30
	Laborers		6,833 73
" 24	Foreman		844 75
	Laborers		1,811 40
" 25	Foreman		834 64
	Laborers		1,886 28
" 26	Foreman		817 24
	Laborers		1,778 39
" 27	Foreman		856 52
	Laborers		1,801 03
" 28	Foreman		827 59
	Laborers		1,582 18
" 29	Foreman		840 34
	Laborers		1,496 25
" 30	Foreman		805 86
	Laborers		1,658 00
" 31	Foreman		824 14
	Laborers		1,615 09
" 32	Foreman		830 24
	Laborers		2,063 61
" 33	Foreman		843 92
	Laborers		2,256 33
" 34	Foreman		824 40
	Laborers		1,960 99
" 35	Foreman		830 23
	Laborers		2,361 24
" 36	Foreman		793 59
	Laborers		1,945 59
" 37	Foreman		814 58
	Laborers		1,526 34
" 38	Foreman		822 55
	Laborers		1,522 67
" 39	Foreman		1,726 64
	Laborers		5,499 56
" 40	Foreman		822 02
	Laborers		1,490 45
" 41	Foreman		823 09
	Laborers		1,465 64
" 42	Foreman		812 22
	Laborers		1,459 97
" 43	Foreman		828 19
	Laborers		1,493 90
" 44	Foreman		828 65
	Laborers		1,906 64
" 45	Foreman		847 45
	Laborers		1,903 45
" 46	Foreman		834 73
	Laborers		1,972 75

Section Gangs.—Continued.

Section No. 47	Foreman	827 16	
	Laborers	1,424 75	
" 48	Foreman	815 18	
	Laborers	1,438 88	
" 49	Foreman	822 67	
	Laborers	1,989 96	
" 50	Foreman	885 47	
	Laborers	2,422 97	
			$148,793 36

Road Department, Extra Gangs.

Extra Gang No. 1	Foreman	$1,519 48	
	Laborers	12,606 53	
" 2	Foreman	889 16	
	Laborers	4,285 43	
" 3	Foreman	729 29	
	Laborers	3,636 04	
" 4	Foreman	573 95	
	Laborers	3,124 20	
" 5	Foreman	901 02	
	Laborers	4,974 36	
" 6	Foreman	777 94	
	Laborers	6,628 22	
" 7	Foreman	1,352 51	
	Laborers	11,402 97	
" 8	Foreman	189 79	
	Laborers	1,663 72	
" 9	Foreman	572 39	
	Laborers	3,713 38	
" 10	Foreman	684 97	
	Laborers	4,029 97	
" 11	Foreman	656 60	
	Laborers	3,487 22	
" 12	Foreman	603 85	
	Laborers	3,801 72	
" 13	Foreman	196 45	
	Laborers	2,450 07	
" 14	Foreman	100 75	
	Laborers	576 70	
" 15	Foreman	288 67	
	Laborers	1,017 59	
" 16	Foreman	146 56	
	Laborers	897 71	
" 17	Foreman	165 55	
	Laborers	1,500 02	
" 18	Foreman	161 52	
	Laborers	1,025 84	
" 19	Foreman	101 85	
	Laborers	605 09	
" 20	Foreman	135 20	
	Laborers	823 47	
			$84,727 75
			$953,209 41



Field of Oats on W. J. Baildry's Farm, Lot 25, Con. 1, Glackmeyer, near Cochrane, Ont., 1915.

TEMISKAMING AND NORTHERN ONTARIO RAILWAY.

EXPENDITURE FOR FISCAL YEAR, 1915.

H. J. Anderson, Methodist Missionary, Englehart, Ont.

Voucher.		
50463—Donation	$5 00	
		$5 00

P. Arico, North Bay, Ont.

50605—Unclaimed wages	$11 40	
		$11 40

The Art Metropole, Toronto, Ont.

50741—Drawing supplies	$16 88	
51384—Paper, etc.	38 54	
51891—Mounting maps	3 50	
52030—Prints	8 25	
52278—Paper	2 50	
53465—Tracing linens and paints	56 12	
53270—Paper	10 12	
54325— "	8 45	
55426—Blue print paper	12 00	
56079—Art gum, etc.	24 49	
		$180 85

Aurora Metal Co., Inc., Aurora, Ill.

51386—Packing	$40 25	
52274— "	21 87	
		$62 12

American Arch Co., New York, N.Y.

51388—Fire brick	$14 90	
52282— " "	15 20	
53467— " "	26 26	
53278— " "	17 70	
56081— " "	17 50	
		$91 56

Armour Car Lines, Chicago, Ill.

51262—Car service balance	$17 17	
52359— " "	12 04	
52538— " "	9 98	
53671— " "	17	
		$39 36

Atlanta, Birmingham & Atlantic Ry., Atlanta, Ga.

51268—Car service balance	$5 40	
		$5 40

Ann Arbor Railroad Co., Ann Arbor, Mich.

51270—Car service balance	$4 95	
52361— " "	10 35	
52540— " "	8 55	
54732—Car repairs	1 98	
55850— "	4 38	
56498E— "	32 95	
		$63 16

ALABAMA GREAT SOUTHERN RY., CINCINNATI, OHIO.

51755—Car repairs	$ 62	
52798— "	1 85	
53985— "	1 15	
53848— "	1 48	
		$5 10

AMERICAN BRAKE SHOE & FOUNDRY CO., MAHWAH, N.J.

51073—Brake shoes	$566 60	
52011— "	795 01	
52735— "	645 02	
54925— "	459 66	
55715— "	529 90	
		$2,996 19

A. ANSON, TIMMINS, ONT.

53557—Ties	$80 54	
54259— "	45 90	
		$126 44

N. ANSARA, COBALT, ONT.

51563—Claim No. 9123	$3 00	
		$3 00

AMERICAN MUSEUM OF SAFETY, NEW YORK, N.Y.

52032—Membership dues	$25 00	
		$25 00

ALEXANDER & CABLE LITHOGRAPHING CO., TORONTO, ONT.

51949—Passes	$6 00	
		$6 00

W. ASSAF, ELK LAKE, ONT.

52753—Claim No. 9625	$2 22	
		$2 22

ARMOUR & CO., HAMILTON, ONT.

52961—Claim No. 9825	$13 95	
		$13 95

ASSOCIATION OF TRANSPORTATION & CAR ACCOUNTING OFFICES, CHICAGO, ILL.

52855—Assessment	$2 00	
54220—Annual dues	10 00	
		$12 00

H. ALLAN, ENGINEERING DEPT., NORTH BAY, ONT.

53083—Travelling expenses	$1 35	
56040— " "	4 50	
		$5 85

AMERICAN HOIST & DERRICK CO., ST. PAUL, MINN.

53469—Repair parts	$19 70	
54329— "	3 50	
		$23 20

AMERICAN STEAM GAUGE & VALVE CO., BOSTON, MASS.

54999—Gauge	$20 00	
		$20 00

ABITIBI POWER & PAPER CO., LTD., MONTREAL, QUE.

51831—Claim No. 8837	$91 11	
51700—Refund of switching charges	140 88	
52751—Claims Nos. 9393 and 9701	32 05	
52963—Claim No. 9508	2 24	
52942—Rebate on construction material	2,620 88	
53827— " " "	1,629 68	
53887— " " "	931 39	
54111— " " "	396 74	
53780— " " "	1,742 59	
53940— " " "	471 50	
54807— " " "	116 23	
54831— " " "	234 50	
54877— " " "	207 59	
54826— " " "	662 09	
55066— " " "	913 99	
55673— " " "	150 33	
55777— " " "	662 82	
56498C— " " "	898 18	
		$11,904 79

AYLMER PUMP & SCALE CO., AYLMER, ONT.

52886—Pump	$7 35	
53746— "	21 60	
55363— "	24 00	
		$52 95

ANCHOR PACKING CO. OF CANADA, WALKERVILLE, ONT.

53272—Packing	$16 44	
		$16 44

ALBERTA BROOM & BRUSH SUPPLY CO., ST. THOMAS, ONT.

53276—Brooms	$32 50	
54327— "	19 50	
		$52 00

AMERICAN BRASS CO., WATERBURY, CONN.

53280—Copper tubing	$52 32	
54388—Collection charges on cheque	36	
		$52 68

ASSOCIATION OF AMERICAN RAILWAY ACCOUNTING OFFICERS, WASHINGTON, D.C.

54263—Annual dues	$14 00	
56172—Assessment	9 99	
		$23 99

A. ARCHAMBAULT, HULL, QUE.

53782—Claim No. 6296	$39 44	
		$39 44

ALABAMA, TENNESSEE & NORTHERN RAILWAY, MOBILE, ALA.

52363—Car service balance	$7 65	
		$7 65

CHARLES ARGUE, WABUN, ONT.

54054—Claim No. 10043	$10 98	
		$10 98

AMERICAN WATCH CASE CO. OF TORONTO, LTD., TORONTO, ONT.

53146—Watches	$30 30	
		$30 30

ALGOMA STEEL CORPORATION, LTD., SAULT STE. MARIE, ONT.

54084—Tie plates	$1,120 64	
54360—Rails	2,142 86	
54362— "	6,447 22	
54364— "	9,143 05	
54363— "	8,288 81	
54368— "	5,292 17	
		$32,434 75

AMERICAN RAILWAY ASSOCIATION, NEW YORK, N.Y.

54663—Assessment	$26 40	
53818—Code of Rules	9 00	
54082—Forms	29 10	
54961—Car Service Rules	1 00	
56077—Home Route Cards	12 50	
51889—Annual dues	24 38	
52028—Copies of Proceedings	3 50	
53085—Copy of Proceedings	15	
56082—Car Service Rules	30	
		$106 33

AMERICAN NOVELTY COMPANY, NORTH BAY, ONT.

54604—Time-tables	$6 00	
		$6 00

P. P. ARMSTRONG, MONTEITH, ONT.

54273—Clearing station grounds, Porquis Junction	$39 00	
		$39 00

AMERICAN RAILWAY MASTER MECHANICS' ASSOCIATION, CHICAGO, ILL.

54658—Dues	$5 00	
		$5 00

A. APPLEBAUM, TORONTO, ONT.

54809—Claim No. 10133	$100 00	
		$100 00

ARKANSAS, LOUISIANA & GULF RY., CROSSETT, ARK.

55215—Car repairs	$0 67	
		$0 67

ATLANTA & ST. ANDREWS BAY RY., PANAMA CITY, FLA.

56388—Car service balance	$1 35	
		$1 35

ADVANCE PUMP & COMPRESSOR CO., BATTLE CREEK, MICH.

55367—Pump parts	$94 71	
		$94 71

ALLEN MFG. CO., TORONTO, ONT.

55654—Laundry work	$18 00	
51695— " "	6 67	

ALLEN MFG. CO., TORONTO, ONT.—*Continued.*

52114— " "	6 58	
52889— " "	2 44	
53087— " "	7 43	
53018— " "	6 95	
53176— " "	10 00	
		$58 07

E. AUMONT, JOLIETTE, QUE.

55723—N. ½ Lot 9, Con. 6, Tp. Taylor	$100 00	
		$100 00

AIR BRAKE ASSOCIATION, BOSTON, MASS.

56085—Copy Proceedings	$2 00	
		$2 00

ATCHISON, TOPEKA & SANTA FE RY., TOPEKA, KAN.

51003—Car repairs	$3 40	
51260—Car service balance	12 15	
51906—Car repairs	3 36	
53127— "	3 80	
53987— "	23 67	
53896— "	7 60	
55213— "	87	
56011— "	2 67	
56386—Car service balance	8 55	
		$66 07

ALABAMA & VICKSBURG RY., NEW ORLEANS, LA.

51289—Car service balance	$1 80	
		$1 80

DR. NORMAN ALLAN, TORONTO, ONT.

51966—Services rendered	$49 00	
		$49 00

AMERICAN ASSN. OF GENERAL BAGGAGE AGENTS, TORONTO, ONT.

52029—Annual dues	$5 00	
		$5 00

AMERICAN RY. ENGINEERING ASSN., CHICAGO, ILL.

50668—Subscription and dues	$10 50	
		$10 50

ADVERTISING AND PUBLISHING AGENCY, TORONTO, ONT.

50494—Advertising, A.O.U.W.	$10 00	
		$10 00

AMERICAN REFRIGERATOR TRANSIT CO., ST. LOUIS, MO.

51285—Car service balance	$4 57	
51264— " "	77	
52357— " "	3 87	
		$9 21

ATLANTIC COAST LINE R.R., WILMINGTON, N.C.

51101—Car repairs	$1 84	
51287—Car service balance	7 20	
51371—Ticket balance	17 25	

ATLANTIC COAST LINE R. R., WILMINGTON, N.C.—*Continued.*

50830—Car repairs	1 16	
53125— "	1 83	
53673— "	6 75	
52798— "	3 40	
53492—Car service balance	5 40	
53568— " "	46 10	
55217—Car repairs	1 38	
55134— "	1 78	
55582—Car service balance	3 45	
56009—Car repairs	1 40	
55846— "	2 88	
		$101 82

ADAMS & WESTLAKE CO., CHICAGO, ILL.

51075—Coach parts	$27 89	
52089—Weather strip	16 25	
52280—Locks	16 00	
53471—Handles	43 20	
54331—Locks	36 50	
54080—Car parts and fittings	53 85	
55265— " " "	88 88	
55364—Coach parts	37 02	
56083—Switch locks and keys	23 00	
		$342 59

F. AYOUB, SAULT STE. MARIE, ONT.

50992—Claim No. 5224	$35 70	
		$35 70

ATCHISON, TOPEKA & SANTA FE RY. COAST LINES, LOS ANGELES, CAL.

51266—Car service balance	$2 70	
		$2 70

A. E. ADSHEAD, HAILEYBURY, ONT.

53889—Claim No. 9900	$0 55	
		$0 55

BEARDMORE & COMPANY, TORONTO, ONT.

55764—Belting	$34 30	
51083— "	6 00	
51402— "	24 70	
52737— "	51 18	
53481— "	13 30	
53284— "	5 70	
54269— "	7 01	
55316— "	51 88	
50714—Harness	8 38	
52926—Leather	8 08	
55027— "	7 55	
55863— "	5 63	
		$223 71

BALTIMORE & OHIO R.R. CO., BALTIMORE, MD.

50765—Car repairs	$16 62
51765— "	28 12
52365—Car service balance	16 65
52480—Car repairs	10 62
53131— "	7 08
53494— "	50 00
53999— "	5 14

BALTIMORE & OHIO R. R. CO., BALTIMORE, MD.—*Continued.*

54549—Car repairs	$21 66	
54561— "	7 65	
54524—Car service balance	56 25	
55297— " "	15 90	
55587—Car repairs	7 35	
55136— "	21 74	
55584—Car service balance	3 10	
51005—Car repairs	44 06	
52965—Claim No. 7812	8 10	
		$320 04

BOSTON & MAINE R.R., BOSTON, MASS.

50761—Car repairs	$2 82	
51299—Car service balance	2 25	
51373—Ticket balance	25 31	
51763—Car repairs	47	
52447—Car service balance	24 78	
52478—Car repairs	2 65	
52632—Ticket balance	16 43	
53747—Car service balance	22 78	
52802—Car repairs	3 07	
53022—Commission on tickets	72	
53570—Ticket balance	3 73	
53997—Car repairs	7 70	
54569—Car service balance	11 70	
54639— " "	13 96	
53900—Car repairs	52	
55221— "	27	
55852— "	4 64	
56392—Car service balance	6 75	
		$150 55

BANK OF OTTAWA, TORONTO, ONT.

50607—Returned draft	$8 10	
50655— " "	32 45	
50737— " "	2 45	
50450—Government printing	3 45	
50454—Returned draft	1 75	
50462— " "	62 61	
51823— " "	40 95	
52027— " "	3 13	
52116— " "	2 70	
52214— " "	1 67	
53271— " "	5 80	
53140— " "	4 55	
54141— " "	21 43	
54207— " "	54	
54705— " "	54	
54046— " "	26 55	
54378— " "	11 80	
54803—Interest on overdraft	2,624 19	
55001—Returned draft	10 05	
54888— " "	20 91	
55921— " "	13 25	
55972— " "	1 35	
		$2,900 22

BALTIMORE & OHIO CHICAGO TERMINAL RY., CHICAGO, ILL.

50759—Car repairs	$2 77	
52806— "	11 23	
52479— "	51	
54736— "	2 85	
55779—Claim No. 10247	7 63	
		$24 99

BELT RAILWAY COMPANY OF CHICAGO, CHICAGO, ILL.

50763—Car repairs	$1 20	
51007— "	2 54	
51024— "	2 73	
51759— "	54	
54736— "	94	
55219— "	2 02	
55856— "	1 01	
		$10 98

BIRMINGHAM & SOUTHERN RY., BIRMINGHAM, ALA.

50767—Car repairs	$8 00	
55858— "	1 85	
		$9 85

BESSEMER & LAKE ERIE R.R., PITTSBURGH, PA.

51011—Car repairs	$3 73	
51293—Car service balance	40 50	
51272— " "	15 30	
52367— " "	4 10	
52474— " "	1 96	
53129—Car repairs	7 15	
53675—Car service balance	15 30	
53496— " "	36 90	
53563— " "	27 90	
56390— " "	8 10	
		$160 94

BUFFALO, ROCHESTER & PITTSBURG RY., ROCHESTER, N.Y.

50769—Car repairs	$2 46	
51009— "	3 33	
51291—Car service balance	11 25	
51026—Car repairs	1 26	
52477— "	1 39	
52476— "	5 16	
52916— "	2 58	
53989— "	16 99	
54526—Car service balance	45	
55223—Car repairs	8 93	
55138— "	7 59	
55783—Claim No. 9629	12 84	
56013—Car repairs	4 56	
55854— "	1 84	
		$80 63

C. BATTLEY, AIR BRAKE INSPECTOR, NORTH BAY, ONT.

50691—Travelling expenses	$6 65	
51251— " "	4 25	
51182— " "	2 50	
54741— " "	1 85	
55051— " "	3 85	
55236— " "	3 95	
56269— " "	5 10	
56042— " "	1 80	
		$29 95

R. G. BOAST, RESIDENT ENGINEER, NORTH BAY, ONT.

50693—Travelling expenses	$19 75	
50915— " "	9 00	
51981— " "	9 25	
53325— " "	4 50	
53216— " "	6 45	

R. G. Boast, Resident Engineer, North Bay, Ont.—*Continued.*

54213—Travelling expenses		$9 10	
54710— " "		8 25	
55049— " "		6 00	
55238— " "		15 25	
55927— " "		6 25	
56094— " "		6 25	
			$100 05

Buffalo & Susquehanna Coal & Coke Co., Buffalo, N.Y.

51499—Coal supplied on contract	$12,542 91	
51602— " "	12,742 48	
52299— " "	18,079 23	
52674— " "	1,449 93	
52676— " "	1,460 64	
52688— " "	1,418 42	
52686— " "	1,401 59	
52698— " "	1,432 80	
52700— " "	1,453 09	
52702— " "	1,435 76	
55627— " "	1,338 59	
55629— " "	1,178 42	
55656— " "	1,046 03	
55658— " "	1,555 11	
55660— " "	1,148 14	
56351— " "	1,022 08	
56353— " "	1,174 05	
56355— " "	1,226 80	
52704— " "	1,453 69	
52706— " "	1,037 36	
52708— " "	1,227 58	
53637— " "	1,164 72	
53639— " "	1,333 10	
53641— " "	1,331 18	
53643— " "	1,306 47	
53645— " "	1,259 89	
53584— " "	1,163 67	
53586— " "	1,291 81	
53588— " "	1,084 19	
53590— " "	1,007 37	
54501— " "	1,261 49	
54503— " "	1,131 90	
54505— " "	1,270 69	
54222— " "	1,045 37	
54224— " "	1,248 95	
54226— " "	1,221 62	
56492— " "	2,948 80	
56494— " "	2,882 66	
		$90,778 58

Buntin, Gillies & Company, Hamilton, Ont.

50723—Stationery supplies	$8 18	
51122— " "	82 16	
51394— " "	144 95	
51893— " "	91 70	
51684— " "	40 92	
55717— " "	86 02	
55909— " "	3 26	
56285— " "	26 39	
55766— " "	3 87	
55890— " "	1 82	
56024— " "	46 36	
52002— " "	99 19	
53311— " "	72 22	
53483— " "	45	

BUNTIN, GILLIES & COMPANY, HAMILTON, ONT.—*Continued.*

52794a—Stationery supplies	$28 85	
52904— " "	86 69	
54105— " "	20 74	
54267— " "	62 96	
54354— " "	59 57	
55085— " "	60 93	
54962— " "	9 38	
55314— " "	3 92	
		$1,040 53

BUFFALO & SUSQUEHANNA R. R. CORP., BUFFALO, N.Y. BUFFALO & SUSQUEHANNA RY.

51295—Car repairs	$109 35	
51297— "	570 15	
51274—Car service balance	44 55	
51276— " "	457 20	
51757—Car repairs	14 49	
52369—Car service balance	76 95	
52371— " "	461 70	
52475—Car repairs	2 55	
52542—Car service balance	37 35	
52544— " "	660 60	
53677— " "	11 70	
53679— " "	512 10	
52816—Car repairs	10 87	
53498—Car service balance	35 10	
53500— " "	486 00	
53993—Car repairs	1 70	
53995— "	7 10	
54565—Car service balance	37 80	
54567— " "	421 65	
54528— " "	9 00	
54530— " "	481 95	
55299— " "	13 95	
55301— " "	353 25	
55140—Car repairs	1 12	
55586—Car service balance	5 40	
55588— " "	211 50	
56367— " "	33 75	
56569— " "	315 00	
56174—Car repairs	21	
56176— "	1 56	
56394—Car service balance	277 70	
		$5,663 30

WILLIAM BRIGGS, METHODIST BOOK & PUBLISHING HOUSE, TORONTO, ONT.

51085—Tariffs	$12 00	
51699—Pamphlets	336 00	
51951—Draft forms	8 50	
53411—Ontario Gazette, Advertising	6 75	
51168—Binder	10 00	
53636—Printing Annual Report	35 28	
54238—Printed Forms	5 00	
55125—Binding Sundry Annual Reports	21 25	
55284—Printing Mining Engineer's Report	22 35	
		$457 13

R. BUNYAN & COMPANY, NORTH BAY, ONT.

50544—Claim No. 9081	$3 39	
51565—Claim No. 8892	10 82	
53829—Claims Nos. 9439 and 9810	8 49	
53895—Claims Nos. 9854 and 9880	2 27	
		$24 97

BROWN BROS., TORONTO, ONT.

56210—Paper Fasteners	$ 32	
		$ 32

R. BLAND, PUMP INSPECTOR, NORTH BAY, ONT.

51253—Travelling expenses	$14 55	
51180— " "	20 20	
51834— " "	8 75	
52228— " "	7 55	
53033— " "	3 40	
		$54 45

W. J. BAULDRY, TOWNSITE INSPECTOR, NORTH BAY, ONT.

51255—Travelling expenses	$15 00	
51100— " "	20 80	
51836— " "	19 50	
52034— " "	17 15	
		$72 45

S. M. BRASHER, RELIEVING AGENT, NORTH BAY, ONT.

51257—Travelling expenses	$8 00	
51102— " "	15 00	
51838— " "	15 00	
52893— " "	5 00	
53327— " "	9 00	
		$52 00

BUSINESS SYSTEMS, LTD., TORONTO, ONT.

51392—Credit forms	$57 18	
52139— "	63 71	
53152— "	128 82	
54088— "	29 65	
55375— "	29 48	
55368— "	3 45	
56089—Printed forms	4 60	
56206— "	20 55	
		$337 44

L. BREWSTER, PORTER, PRIVATE CAR, TORONTO, ONT.

52891—Supplies for private car	$ 35	
53180— " "	11 83	
55919— " "	15 45	
56307— " "	1 50	
		$29 13

G. BARONE, MOTIVE POWER DEPT., NORTH BAY, ONT.

50689—Travelling expenses	$9 80	
51247— " "	4 90	
56046— " "	2 10	
		$16 80

J. H. BOWMAN, SPECIAL OFFICER, COBALT, ONT.

50695—Travelling expenses	$36 50	
51249— " "	30 50	
51743— " "	32 00	
52096— " "	13 00	
55336— " "	3 50	
		$115 50

BELL TELEPHONE COMPANY OF CANADA, LTD., TORONTO, ONT.

50893—Exchange service	$12 50	
50686—Long distance messages	5 40	
51146—Exchange service	6 75	
51675— " "	11 35	
51697— " "	73 75	
51895— " "	26 75	
51897—Installing switchboard	90 68	
52031—Exchange service (difference old and new rate)	2 53	
52255—Long distance messages	1 25	
52559—Telephone interchange	112 57	
51902— " "	40 75	
52286—Cables	8 05	
52534—Telephone interchange	101 21	
52682— " "	162 37	
52893A—Long distance messages	26 00	
53377—Exchange service	88 95	
53459— "	30 20	
53779—Telephone interchange	203 77	
52922—Exchange service and long distance messages	124 95	
53178—Long distance messages	1 70	
53618— " "	5 75	
53674—Telephone interchange	89 27	
54147—Long distance messages	5 35	
54707—Telephone interchange	142 57	
53820—Long distance messages	1 25	
54020—Exchange service and long distance messages	42 95	
54022—Exchange service	10 50	
54708—Telephone interchange	134 99	
54931—Exchange service	18 35	
54939— " "	79 50	
55037—Long distance messages	1 25	
55625—Telephone interchange	51 33	
54982—Exchange service	10 25	
55268—Long distance messages	5 25	
55662—Telephone interchange	114 96	
55664—Long distance messages	2 90	
55725—Exchange service (difference old and new rate)	13 87	
55979—Exchange service and long distance messages	48 75	
56027—Exchange service	9 25	
56439—Telephone interchange	168 75	
55782—Exchange service	65 64	
55794— " "	17 20	
55976—Long distance messages	5 80	
56312—Exchange service	10 45	
56460—Telephone interchange	147 86	
56460—Telephone interchange		$2,335 47

BARBER-ELLIS, LTD., TORONTO, ONT.

51081—Way-bill pockets	$13 63	
51396—Envelopes	20 58	
52288— "	49 30	
53479— "	2 50	
53282— "	5 00	
54341— "	10 50	
54090— "	27 63	
54386— "	4 50	
56097— "	28 25	
		$161 89

BEGG BROTHERS, NORTH BAY, ONT.

51089—Dry Goods	$11 56
51398— "	37 06
52137— "	24 23
53286— "	11 78

BEGG BROS., NORTH BAY, ONT.—*Continued.*

54339—Dry Goods	$11 48	
54086— "	46 24	
55373— "	2 50	
55366— "	17 33	
56095— "	21 70	
56208— "	29 30	
		$213 18

E. C. BANKS, G. F. & P. A. DEPT., NORTH BAY, ONT.

50818—Travelling expenses	$17 25	
51983— " "	57 00	
52226— " "	47 90	
53301— " "	48 10	
53214— " "	34 75	
54217— " "	35 50	
54006— " "	21 50	
55055— " "	31 05	
55060— " "	19 50	
55929— " "	18 75	
55978— " "	37 25	
		$368 55

BOSTON & ALBANY R. R., NEW YORK, N.Y.

51761—Car repairs	$1 54	
53991— "	54	
53898— "	1 16	
		$3 24

BRANTFORD CARRIAGE CO., LTD., BRANTFORD, ONT.

52720—Claim No. 8118	$2 10	
		$2 10

BALFOUR, SMYE & CO., HAMILTON, ONT.

52944—Claim No. 9373	$1 80	
		$1 80

P. B. BARNARD, TORONTO, ONT.

53881—Right-of-way, N. ½ Lot 8, Con. 5, Tp. Taylor	$25 00	
		$25 00

P. T. BROWN, HEASLIP, ONT.

54890—Donation for cow alleged killed	$25 00	
		$25 00

D. BERTRAND, PORCUPINE, ONT.

53774—Donation *re* cow alleged killed	$35 00	
		$35 00

A. BUCOVETSKY, SOUTH PORCUPINE, ONT.

53944—Claim No. 9704	$14 63	
		$14 63

JNO. BOURKE & CO., NORTH BAY, ONT.

54092—Pitch	$4 03	
55377—Lath and lime	34 40	
55370—Building material	96 05	
56212—Roofing	42 00	
		$176 48

H. Bourgford, Haileybury, Ont.

50469—Claim No. 8771	$3 50	
		$3 50

Geo. Brimstin Co., Toronto, Ont.

50525—Lock	$1 75	
		$1 75

Bicknell, Bain, Macdonell & Gordon, Toronto, Ont.

50537—Assurance fee	$17 80	
		$17 80

The Binkley Co., New Liskeard, Ont.

50621—Claim No. 8537	$7 36	
		$7 36

Wm. Beaton, Cobalt, Ont.

50623—Claim No. 7114	$33 66	
		$33 66

Fred. Brown, Iroquois Falls, Ont.

50657—Refund of deposit on siding	$22 45	
55116—Ties	9 60	
54259— "	5 85	
		$37 88

J. R. Booth, Ottawa, Ont.

50542—Claim No. 7518	$1 41	
55781— " 10247	4 24	
		$5 65

Brotherhood of Railroad Stationmen, Toronto, Ont.

50516—Advertising	$10 00	
55128— "	10 00	
51673— "	10 00	
		$30 00

Blanchet & Fitzpatrick, North Bay, Ont.

50546—Claim No. 9357	$15 60	
		$15 60

R. H. Brown & Co., Latchford, Ont.

Voucher.		
50548—Claim No. 8810	$ 55	
52967—Claims Nos. 8860 and 9667	10 77	
		$11 32

Buffalo Mines, Ltd., Cobalt, Ont.

50550—Claim No. 8486	$12 15	
56110— " 10166	46 20	
52575— " 8331	76 95	
		$135 30

C. Bernstein, Englehart, Ont.

53893—Claim No. 9932	$9 20	
50552—Claims Nos. 8495 and 8648	23 11	
		$32 31

H. A. Binch, Kenabeek, Ont.

50670—Clearing Kenabeek Station grounds	$61 60	
		$61 60

H. E. Blackwell, Haileybury, Ont.

50684—Claim No. 8711	$135 00	
51070— " 8711	9 00	
		$144 00

D. Bisson, Cochrane, Ont.

52882—Pulpwood	$47 21	
		$47 21

J. Belleveau, North Bay, Ont.

Voucher.

52898—Settlement *re* alleged injury	$58 38	
		$58 38

W. Brigginshaw, North Bay, Ont.

52910—Settlement *re* alleged injuries	$16 03	
		$16 03

L. Boivin, Cochrane, Ont.

53891—Claim No. 9515	$6 00	
		$6 00

M. Boivin, Cochrane, Ont.

56468—Ties	$180 80	
		$180 80

Thomas Brown, Englehart, Ont.

54101—Pulpwood	$29 58	
54472a— "	7 76	
51704—Claim No. 9640	5 00	
		$42 34

C. O. Baker, Agent, North Bay, Ont.

54215—Travelling expenses	$13 45	
		$13 45

Beamish & Smith, North Bay, Ont.

54335—Duck	$2 68	
55369—Thread	54	
55374—Overalls	14 00	
		$17 22

Bird & Son, Hamilton, Ont.

54337—Building paper	$7 00	
		$7 00

Burrow, Stewart & Milne Company, Hamilton, Ont.

51087—Baggage truck	$45 00	
51404— "	66 00	
54333—Scale tickets	3 85	
56087— "	9 63	
52292—Castings	12 04	
53477—Scale tickets	5 55	
53484— "	6 88	
		$148 95

BERLIN FELT BOOT COMPANY, BERLIN, ONT.

51091—Felt	$9 88	
52091— "	30 45	
55372— "	13 50	
		$53 83

J. C. BOGART, THORNLOE, ONT.

50712—Lumber	$268 80	
56468—Switch sets	79 05	
		$347 85

O. E. BOWMAN, THORNLOE, ONT.

51708—Claim No. 9519	$4 55	
55068— " 9488	11 64	
		$16 19

R. BISHOP MFG. COMPANY, CHICAGO, ILL.

51077—Lamp wick	$4 50	
56022— "	4 00	
		$8 50

D. W. BOSLEY COMPANY, CHICAGO, ILL.

54345—Weather strip	$21 00	
55379— "	15 00	
52294— "	1 60	
		$48 60

BURROWES & PARMALEE, NORTH BAY, ONT.

51079—Lamps	$9 00	
51400—Tubing	75	
52296—Electrical material	4 50	
54343— " "	4 01	
55371— " "	3 49	
56091— " "	1 20	
		$22 95

A. BRAZEAU, SOUTH PORCUPINE, ONT.

50994—Plumbing	$15 69	
53942—Claim No. 9428	5 44	
		$21 13

L. S. BROWN, CAR DEPARTMENT, ENGLEHART, ONT.

51184—Travelling expenses	$2 05	
		$2 05

BENJAMIN ELECTRIC MFG. CO., OF CANADA, TORONTO, ONT.

53473—Steel hoods	$5 46	
		$5 46

BRITISH CANADIAN, SIMCOE, ONT.

51204—Advertising	$5 00	
		$5 00

F. N. BURT COMPANY, LTD., TORONTO, ONT.

51390—Forms	$56 25	
		$56 25

E. C. Bumstead, Earlton, Ont.

51635—Donation *re* ties alleged destroyed by fire	$200 00	
		$200 00

Burroughs Adding Machine Co., Toronto, Ont.

51953—Inspecting machine	$4 00	
54980— " "	4 00	
56204—Paper rolls for machine	1 60	
		$9 60

W. C. Baker Car Heater Co., Detroit, Mich.

52212—Coils, etc.	$95 00	
		$95 00

Batts, Ltd., Toronto, Ont.

53475—Sash	$17 25	
		$17 25

Boeckh Bros. Co., Ltd., Toronto, Ont.

52093—Brushes	$21 00	
52290— "	14 00	
		$35 00

Beach Foundry Co., Ltd., Ottawa, Ont.

52284—Castings	$16 94	
		$16 94

J. Burns, Earlton, Ont.

54259—Ties	$35 90	
		$35 90

James Burns, Iroquois Falls, Ont.

52694—Ties	$78 50	
		$78 50

Mrs. James Burns, Iroquois Falls, Ont.

52571—Claim No. 8977	$45 50	
		$45 50

Bradley & Rush, Georgetown, Ont.

52573—Claim No. 9514	$13 40	
		$13 40

W. W. Butler & Co., Ltd., Montreal, Que.

55334—Truck frames, etc.	$2,595 36	
		$2,595 36

Jno. J. Bakewell, North Bay, Ont.

55749—Award Workmen's Compensation Board, *re* alleged injuries	$15 98	
		$15 98

S. S. Brach Supply Co., New York, N.Y.

56093—Lightning arresters	$16 20	
		$16 20

F. B. Beemer, Relieving Agent, North Bay, Ont.

55838 Travelling expenses	$47 80	$47 80

Bucovetsky Bros., Timmins, Ont.

55912—Claim No. 10373	$10 00	$10 00

Geo. Burton, Matheson, Ont.

52577—Claim No. 9302	$1 50	$1 50

Brady & Harris, Ottawa, Ont.

52719—Services rendered	$32 00	$32 00

L. W. Brown, South Porcupine, Ont.

52755—Claim No. 9560	$1 12	$1 12

P. D. Boyer, Haileybury, Ont.

52757—Claims Nos. 9571 and 9566	$12 61	$12 61

E. Bertheaume, Cochrane, Ont.

52857—Pulpwood	$54 04	$54 04

T. H. Booth, Homer Siding, Ont.

52857—Pulpwood	$53 88	$53 88

N. Buss, Nushka, Ont.

52557—Ties	$38 50	
52857—Pulpwood	59 60	
52694—Ties	23 00	
		$121 10

W. Burnett, Nushka, Ont.

52537—Ties	$39 69	
52694— "	23 70	
53251—Pulpwood	54 48	
56214—Wood	18 50	
		$136 37

P. Bernard & Son, Cochrane, Ont.

52152—Ice	$260 00	$260 00

Bureau of Explosives, New York, N.Y.

52210—Bulletins	$4 50	
53620—Assessment	105 36	
54665—Bulletins	4 50	
55226— "	4 50	
		$118 86

BANNER & OSTROM, NORTH BAY, ONT.

52035—Groceries and provisions	$13 28	
53089— " "	24 86	
53020— " "	12 09	
54281— " "	27 80	
		$78 03

G. BRODETTE, COCHRANE, ONT.

52857—Pulpwood	$48 79	
		$48 79

J. BOYER, LINEMAN, NORTH BAY, ONT.

53091—Travelling expenses	$2 95	
		$2 95

GEO. W. BOWMAN, HOMER SIDING, ONT.

53251—Pulpwood	$60 48	
		$60 48

P. BURNETT, THORNLOE, ONT.

52694—Ties	$19 77	
53251—Pulpwood	7 97	
53777—Ties	11 10	
52891—Pulpwood	30 66	
		$69 50

J. BEATH, CAR FOREMAN, NORTH BAY, ONT.

53329—Travelling expenses	$2 40	
53218— " "	2 50	
55053— " "	2 65	
56044— " "	3 30	
		$10 85

JOSEPH BERNATCHEY, COCHRANE, ONT.

52920—Pulpwood	$58 01	
		$58 01

B. BENOIT, METTAGAMI HEIGHTS, ONT.

53777—Ties	$60 00	
55116— "	20 00	
		$80 00

D. C. BURKHOLDER, NEW LISKEARD, ONT.

54833—Claim No. 10074	$2 31	
		$2 31

CANADIAN PACIFIC RAILWAY, MONTREAL, QUE.

50471—Claims	$71 54
50521—Freight settlement	746 09
50531— " "	2,630 05
50549—Claim	77 46
50609—Freight settlement	895 80
50629—Claims	3 47
50719—Freight settlement	899 51
50771—Car repairs	12 20
50895—Construction connection North Bay	12,161 14
51013—Car repairs	3 82
51301—Car service balance	2,007 59

CANADIAN PACIFIC RAILWAY, MONTREAL, QUEBEC.—*Continued.*

51375—Ticket balance	$1,156 50
51447—Interline freight	3,105 53
51499A—Terminal charges	635 51
50478—Freight settlement	1,717 36
50508— " "	1,731 54
50534— " "	3,603 90
50832—Car repairs	87 69
50870—Freight settlement	3,213 05
50932—Claims	116 86
51090—Commission on tickets	53 51
51206—Tariffs	42 22
51278—Car service balance	1,730 30
51362—Ticket balance	1,432 86
51566—Interline freight	433 07
51648—Terminal charges	638 52
51523—Claims	271 85
51539—Freight settlement	2,103 59
51543— " "	3,792 79
51557— " "	1,789 49
51825— " "	3,200 70
51833—Claims	263 78
52373—Car service balance	2,147 51
52449—Ticket balance	4,338 90
52481—Car repairs	29 41
52563—Terminal charges	657 53
51664—Freight settlement	1,111 35
51786— " "	2,251 23
51797— " "	2,737 66
51908—Car repairs	8 59
51970—Freight settlement	2,361 16
52156—Steam hose	4 66
52302—Tail pocket	3 45
52546—Car service balance	2,303 35
52634—Ticket balance	1,462 73
52652—Supplies for car "Sir James"	50
52692—Terminal charges	687 73
52703—Claims	27 78
52723—Freight settlement	1,880 79
52725— " "	3,401 15
52759—Claims	91 84
52851—Freight settlement	1,987 70
52969—Claims	450 15
53093—Commission on tickets	15 70
53139—Heating cars	40 90
53145—Car repairs	21 03
53249—Freight settlement	2,311 48
53263—Freight charges	15 86
53389—Tariffs	28 00
53681—Car service balance	2,392 64
53749—Ticket balance	1,621 89
53783—Terminal charges	622 84
52722—Claims	19 14
52780—Freight settlement	967 47
52794— " "	1,128 16
52824—Car repairs	28 83
52914—Freight settlement	789 13
52946—Claims	55 93
53074—Lighting and heating cars	225 50
53134—Freight settlement	408 30
53304—Repair parts	7 55
53502—Car service balance	1,742 02
53572—Ticket balance	2,410 32
53610—Freight settlement	655 34
53672—Terminal charges	617 09
53831—Claims	3 25

CANADIAN PACIFIC RAILWAY, MONTREAL, QUEBEC.—*Continued.*

53897—Claims	$323	33
53953—Freight settlement	418	81
54005—Car repairs	69	53
54113—Claims	2	47
54149—Heating cars and supplies	34	12
54253—Freight settlement	1,332	85
54571—Car service balance	1,027	22
54641— " " "	1,091	02
54661—Terminal charges	618	96
54667—Heating cars	10	00
54709—Freight settlement	1,229	18
54711—Collection bond charges	205	92
53724—Freight settlement	450	45
53768— " "	2,394	60
53776— " "	785	84
53784—Claims	17	34
53822—Gas	21	11
53946—Claims	16	60
54024—Rental electric lighting equipment in cars	136	35
54382—Boiler plate	5	72
54466—Commission on ticket sale		60
54532—Car service balance	866	56
54584—Ticket balance	313	24
54602—Freight settlement	787	73
54662—Terminal charges	598	81
54811—Claim No. 9728	3	43
54871—Freight settlement	1,331	83
54879—Claims	157	02
54955—Freight settlement	1,148	12
54963—Telegraph tariff books	24	00
55225—Car repairs	81	39
55303—Car service balance	1,246	30
55345—Ticket balance	1,810	54
55539—Boiler plate	10	09
55623—Terminal charges	655	86
54814—Freight settlement	1,929	26
54828—Claims	53	53
54872—Transportation	10	00
55142—Car repairs	100	97
55194— "	16	36
55270—Cleaning cars, commission on tickets, etc.	10	84
55394—Boiler tubes	43	49
55590—Car service balance	1,240	20
55640—Ticket balance	4,175	91
55724—Terminal charges	687	64
55675—Claims	66	42
55713—Freight settlement	631	92
55785—Claims	120	25
56115—Copper ferrules	4	52
56357—Commission on tickets, etc.	6	52
56371—Car service balance	955	75
56423—Ticket balance	2,428	44
56441—Terminal charges	672	12
55740—Freight settlement	591	70
55756— " "	485	10
55786— " "	707	65
56072—Ferrules and boiler plate	16	50
56372—Terminal charges	674	52
56446—Ticket balance	2,735	77
56396—Car service balance	1,424	75
56458—Interline freight balance	1,912	22
		$135,632 12

CHICAGO, BURLINGTON & QUINCY R.R., CHICAGO, ILL.

50473—Claim No. 8635	$1 32	
50555— " No. 8446	1 32	
50775—Car repairs	3 58	
51027— " "	44 88	
51030— " "	27 66	
51835—Claim No. 9285 and No. 9047	8 29	
52451—Ticket balance	52	
52489—Car repairs	9 57	
51708—Claims	12 18	
52494—Claim No. 9226	18 77	
52585—Claims	5 95	
52971—Car repairs	2 32	
53751— " "	11 56	
52826— " "	90 07	
53574—Ticket balance	3 60	
53833—Claims	15 99	
54007—Car repairs	61 27	
53788—Claim No. 9785	1 53	
53948— " No. 8987	1 92	
53916—Car repairs	18 31	
54989— " "	18 99	
54832—Claim No. 10094	2 69	
55198—Car repairs	22 12	
55679—Claim No. 10118	1 10	
55789— " No. 9312	1 25	
		$386 76

CENTRAL ONTARIO RAILWAY, TORONTO, ONT.

54830—Claim No. 6586	$2 31	
		$2 31

CHICAGO & EASTERN ILLINOIS RAILWAY, CHICAGO, ILL.

50773—Car repairs	$11 51	
50838— " "	17 66	
51773— " "	98	
53137— " "	11 68	
52806— " "	4 61	
54023— " "	1 63	
53924— " "	46 46	
54738— " "	1 85	
55202— " "	46	
		$96 84

CHICAGO R.R. ASSOCIATION, CHICAGO, ILL.

54898—Rate sheets	$2 00	
50947— "	2 00	
		$4 00

CINCINNATI, HAMILTON & DAYTON R.R., CINCINNATI, OHIO.

50779—Car repairs	$2 99	
51284—Car service balance	1 35	
52381— " "	6 30	
54538— " "	1 35	
54742—Car repairs	19 68	
56379—Car service balance	7 20	
51021—Car repairs	3 76	
50836— "	3 05	
52491— "	2 18	
52556—Car service balance	16 20	
53135—Car repairs	66	
53689—Car service balance	4 50	

CINCINNATI, HAMILTON & DAYTON R. R., CINCINNATI, OHIO.—*Continued.*

52804—Car repairs	$ 48	
53508—Car service balance	42 30	
54579— " "	5 40	
54581— " "	8 55	
56404— " "	1 80	
		$127 75

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS RAILWAY, CINCINNATI, OHIO.

50781—Car repairs	$27 91	
51364—Ticket balance	4 10	
52828—Car repairs	4 18	
54001— "	24 61	
53902— "	3 84	
54987— "	31 13	
55200— "	7 03	
55677—Claims Nos. 9974 and 9975	2 36	
		$105 16

CHICAGO & NORTHWESTERN RAILWAY, CHICAGO, ILL.

50848—Car repairs	$25 16	
53151— "	21	
54021— "	45 14	
55243— "	79 80	
56019— "	19 20	
		$169 51

CHICAGO, INDIANAPOLIS & LOUISVILLE RAILWAY, CHICAGO, ILL.

50789—Car repairs	$1 45	
51015— "	6 47	
51288—Car service balance	4 05	
52385— " "	4 05	
54015—Car repairs	4 70	
55239— "	4 95	
55307—Car service balance	45	
55140—Car repairs	7 24	
55598—Car service balance	11 25	
		$44 61

CHICAGO, MILWAUKEE & GARY RAILWAY CO., ROCKFORD, ILL.

55158—Car repairs	$ 84	
		$ 84

CINCINNATI, NEW ORLEANS & TEXAS PACIFIC RAILWAY, CINCINNATI, OHIO.

50793—Car repairs	$1 28	
51032— "	44	
51777— "	2 55	
52375—Car service balance	11 25	
52486—Car repairs	27	
53092— "	1 05	
54003— "	15 31	
55229— "	3 08	
55146— "	2 07	
53914— "	5 86	
56033— "	2 56	
		$45 72

CHICAGO, GREAT-WESTERN RAILWAY, CHICAGO, ILL.

50795—Car repairs	$14 68	
50844— "	4 10	
52485— "	9 65	
51914— "	9 87	
53161— "	1 22	

CHICAGO, GREAT-WESTERN RAILWAY, CHICAGO, ILL.—*Continued.*

53510—Car service balance	$5 85	
54019—Car repairs	6 69	
53920— "	3 91	
55241 "	8 27	
56021— "	10 43	
55861 "	1 91	
56406—Car service balance	3 00	
		$79 58

CHICAGO JUNCTION RAILWAY, CHICAGO, ILL.

50785—Car repairs	$1 49	
51773— "	7 30	
53133— "	27 61	
52830— "	36 66	
53922— "	14 67	
55231— "	187 40	
		$275 13

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA RAILWAY, ST. PAUL, MINN.

50797—Car repairs	$19 51	
51023— "	2 29	
51026— "	8 25	
52495— "	18 53	
51916— "	6 72	
53153— "	2 60	
53032— "	20 23	
54009— "	51 91	
53918— "	2 93	
55233— "	16 74	
55152— "	2 24	
56017— "	1 09	
55870— "	3 20	
56498F— "	69 86	
		$226 10

CHICAGO & ALTON RAILROAD, CHICAGO, ILL.

51029—Car repairs	$1 39	
50842— "	15	
52548— "	4 50	
53683—Car service balance	3 10	
52822—Car repairs	23 04	
53034 "	65	
53906— "	1 90	
54744— "	6 64	
55154— "	6 73	
56015— "	19 64	
		$67 74

CANADIAN NORTHERN RAILWAY SYSTEM, TORONTO, ONT.

50791—Car repairs	$ 74	
51311—Car service balance	37 35	
51748—Freight settlement	125 32	
50846—Car repairs	96	
51072—Freight settlement	211 38	
53772— " "	19 07	
53908—Car repairs	4 28	
54026—Freight charges	39 00	
54048—Freight settlement	86	
54540—Car service balance	108 00	
55309— " "	124 70	
53631—Interline freight balance	623 10	

CANADIAN NORTHERN RAILWAY SYSTEM, TORONTO, ONT.—*Continued.*

54892—Freight settlement	$686 09	
55600—Car service balance	145 80	
55706—Freight settlement	652 51	
55669— " "	662 23	
55727— " "	191 06	
55787—Claim No. 9481	24 04	
55873—Freight settlement	359 70	
56055—Car repairs	54	
55952—Freight settlement	1,330 65	
56408—Car service balance	207 90	
56472—Interline freight balance	5 06	
52041—Commission on tickets	5 02	
51377—Ticket balance	06	
51292—Car service balance	17 10	
51553—Freight settlement	319 20	
51767—Car repairs	52	
52197—Freight settlement	239 40	
52453—Ticket balance	18 10	
51682—Freight settlement	443 84	
51788— " "	353 70	
52154— " "	151 51	
52492—Car repairs	2 50	
52560—Car service balance	49 95	
52731—Freight settlement	25 82	
52859— " "	43 09	
53695—Car service balance	83 20	
53773—Interline freight balance	422 53	
52792—Freight settlement	24 60	
52808—Car repairs	7 27	
53030— "	86	
53516—Car service balance	83 55	
54013—Car repairs	1 08	
54551— "	4 03	
54585—Car service balance	64 30	
54839—Claim No. 8467	1 34	
54873—Freight setttlement	153 47	
54875— " "	177 84	
54957— " "	246 36	
55041— " "	2,447 99	
55169—Car repairs	1 40	
55171— "	2 05	
54816—Freight settlement	8 90	
54868— " "	469 87	
56381—Car service balance	174 15	
56447—Interline freight balance	753 08	
55742—Freight settlement	127 99	
55860—Car repairs	86	
		$12,486 87

CHICAGO, MILWAUKEE & ST. PAUL RAILWAY, CHICAGO, ILL.

50777—Car repairs	$43 72	
51019— "	22 95	
51028— "	42 88	
52487— "	19 95	
52490— "	18 32	
52820— "	60 69	
53036— "	21 20	
54011— "	9 57	
54573—Car service balance	1 65	
53912—Car repairs	8 55	
54983— "	3 53	
55204— "	15 37	
		$268 38

COOK & MITCHELL, SOLICITORS, SOUTH PORCUPINE, ONT.

53628—Professional services rendered	$102 00	
		$102 00

CHESAPEAKE & OHIO RAILWAY, RICHMOND, VA.

51025—Car repairs	$2 10	
51307—Car service balance	49 50	
51280— " "	19 35	
51771—Car repairs	2 69	
52377—Car service balance	17 10	
52552— " "	89 20	
52686—Car repairs	5 12	
53149— "	6 46	
53687—Car service balance	53 55	
53506— " "	86 40	
54577— " "	17 10	
54683—Car repairs	2 65	
54534—Car service balance	8 75	
54746—Car repairs	3 07	
55235— "	3 40	
55156— "	6 22	
55592—Car service balance	17 90	
56375— " "	12 10	
56400— " "	7 65	
		$410 31

CANADIAN GOVERNMENT RAILWAYS, MONCTON, N.B.

56385—Car service balance	$587 88	
56410— " "	555 42	
56470—Ticket balance	1,682 95	
55796—Car repairs	2 60	
		$2,828 85

S. B. CLEMENT, C. E. & S. OF M., NORTH BAY, ONT.

50881—Salary	$335 00	
50889—Travelling expenses	39 45	
51057—Salary	335 00	
51084—Travelling expenses	16 60	
52017—Salary	345 00	
52086—Salary	345 00	
52035—Travelling expenses	22 35	
53257—Salary	345 00	
53124—Salary	345 00	
54221—Travelling expenses	22 45	
54243—Salary	345 00	
54743—Travelling expenses	26 38	
54342—Salary	345 00	
54712—Travelling expenses	20 95	
55017—Salary	345 00	
55118—Salary	345 00	
55240—Travelling expenses	29 75	
55895—Salary	345 00	
55931—Travelling expenses	10 80	
55958—Salary	345 00	
56048—Travelling expenses	35 50	
		$4,343 63

CANADIAN YALE & TOWNE, LTD., ST. CATHARINES, ONT.

51111—Padlocks	$10 74	
50718— "	21 05	
51448—Latches, door checks, etc.	14 78	
52316—Padlocks	7 34	

CANADIAN YALE & TOWNE, LTD., ST. CATHARINES, ONT.—*Continued.*

53489—Door locks, etc.	$38 50	
54096— " "	4 46	
55376— " "	31 92	
56111— " "	18 51	
		$147 30

CANADIAN BRONZE, LTD., MONTREAL, QUE.

51113—Castings	$205 06	
51418— "	633 25	
52328— "	282 89	
53499— "	597 90	
54273— "	142 93	
54596— "	69 72	
55419— "	630 54	
56478— "	408 62	
		$2,970 91

A. A. COLE, MINING ENGINEER, COBALT, ONT.

50449—Salary	$275 00	
50490—Salary	275 00	
50747—Expenses	1 69	
51503—Salary	285 00	
50820—Expenses	9 27	
51985—Expenses	12 62	
51652—Salary	285 00	
52098—Expenses	1 63	
52689—Salary	285 00	
53097—Expenses	1 90	
52762—Salary	285 00	
53076—Expenses	2 69	
53791—Salary	285 00	
54219—Expenses	10 14	
53708—Salary	285 00	
54008—Expenses	17 31	
54789—Salary	285 00	
55057—Expenses	9 58	
54800—Salary	285 00	
55062—Expenses	8 02	
55655—Salary	285 00	
55981—Expenses	16 63	
55744—Salary	285 00	
55956—Expenses	8 25	
		$3,499 73

CANADIAN ALLIS-CHALMERS, LTD., TORONTO, ONT.

50625—Claim No. 7274	$47 75	
51131—Rope	28 90	
50562—Claim No. 8046	2 31	
52579— " No. 8877	30 00	
52763— " No. 9626	1 40	
53065—Turbine pump equipment	573 50	
53310—Valve parts	15 60	
54835—Claim No. 9953	1 80	
55389—Balls	66 60	
56116—Claim No. 8726	15 07	
56248—Pipe	41 58	
		$824 51

CHARLTON-ENGLEHART LIGHT & POWER CO., CHARLTON, ONT.

51758—Current	$7 20	
51701— "	5 10	
51796— "	3 10	
52903— "	139 16	
53383— "	99 74	
53624— "	104 60	
54767— "	102 46	
54336— "	1 90	
54610— "	1 80	
54664— "	103 32	
55161— "	1 80	
55599— "	107 21	
55538— "	2 70	
55708— "	123 12	
56441— "	117 31	
56474— "	119 59	
		$1,040 11

COCHRANE STEAM LAUNDRY, COCHRANE, ONT.

53413—Laundry work	$21 45	
53626— " "	28 97	
54681— " "	23 51	
55163— " "	25 08	
55540— " "	22 03	
50750— " "	1 38	
50760— " "	25 46	
51901— " "	29 97	
51806— " "	20 66	
52865— " "	20 90	
54606— " "	23 34	
		$242 75

CANADA FURNITURE CO., WOODSTOCK, ONT.

52888—Cabinet	$17 64	
53752—Chairs	9 55	
57810—Stool	2 30	
		$29 49

F. CORSI, NORTH BAY, ONT.

52912—Settlement *re* alleged injuries	$62 70	
53879—Final settlement *re* alleged injuries	13 58	
		$76 28

COBALT WATER COMMISSION, COBALT, ONT.

53028—Water rates	$8 00	
		$8 00

M. CANNON, COBALT, ONT.

54056—Claim No. 9669	$ 36	
		$ 36

CENTRAL INDIANA RAILWAY, ANDERSON, IND.

54553—Car repairs	$ 33	
		$ 33

CHICAGO RAILWAY EQUIPMENT CO., CHICAGO, ILL.

54102—Side bearings	$26 00	
		$26 00

CANADIAN ASBESTOS CO., LTD., MONTREAL, QUE.

52157—Asbestos	$11 25	
53497— "	32 54	
53288— "	67 95	
55396— "	5 04	
56226—Magnesia blocks	57 75	
		$174 53

THOMAS COOK & SON, NEW YORK, N.Y.

54228—Commission on tickets	$8 94	
		$8 94

CROSBY STEAM GAUGE AND VALVE CO., CHICAGO, ILL.

54380—Air brake recorder	$80 00	
		$80 00

JNO. CAMPBELL, NORTH BAY, ONT.

54394—Settlement *re* alleged injuries	$8 14	
		$8 14

L. C. CHASE & CO., BOSTON, MASS.

54408—Plush	$9 38	
56240— "	36 09	
		$45 47

ARTHUR CAMPBELL, L'ORIGNAL, ONT.

54841—Claim No. 8467	$43 90	
		$43 90

C. A. CULBERT, SOUTH PORCUPINE, ONT.

54881—Claim No. 1024	$3 90	
50627— " 8820	12 65	
51573— " 8845	16 05	
50475— " 8659	21 40	
		$54 00

CANUCK SUPPLY CO., LTD., MONTREAL, QUE.

52155—Paint	$15 75	
54098— "	15 40	
		$31 15

CITY MEAT MARKET, ENGLEHART, ONT.

51451—Meats	$11 90	
		$11 90

A. COUCH, STORES DEPARTMENT, NORTH BAY, ONT.

56074—Travelling expenses	$14 00	
		$14 00

COBALT MINES HOSPITAL, COBALT, ONT.

50458—Donation	$100 00	
		$100 00

F. T. CADE, MOTIVE POWER DEPARTMENT, NORTH BAY, ONT.

56052—Travelling expenses	$4 35	
		$4 35

COBALT COMET MINES, LTD., GIROUX LAKE, ONT.

50496—Ground rent, Kerr Lake	$6 00	
		$6 00

GORDON CORBETT, TORONTO, ONT.

54953—Services renedered	$5 00	
		$5 00

CANADIAN BANK OF COMMERCE, SUDBURY, ONT.

50536—Claim No. 9046	$97 00	
53986— " 8772	3 96	
		$100 96

FRANK A. CHILD, MATHESON, ONT.

50556—Claim No. 8897	$ 65	
50752—Can	30	
51567—Claim Nos. 8895 and 9004	7 47	
51583—Claim No. 9506	2 50	
54115— " 9380	11 05	
55070— " 9518	13 38	
56112— " 10273	12 60	
		$47 95

COCKSHUTT PLOW CO., BRANTFORD, ONT.

50558—Claim No. 8723	$1 00	
		$1 00

CURTAIN SUPPLY CO., CHICAGO, ILL.

55003—Curtains	$160 86	
		$160 86

CANADA PEBBLE CO., LTD., PORT ARTHUR, ONT.

50560—Claim No. 9224	$60 00	
		$60 00

CANADIAN PNEUMATIC TOOL CO., LTD., MONTREAL, QUE.

55386—Repair parts	$5 99	
		$5 99

F. CATTERELLO, COBALT, ONT.

50604—Claim No. 8983	$1 45	
		$1 45

B. CAIRNS, TORONTO, ONT.

50615—Rubber stamps	$2 00	
51088—Numbering machine	9 15	
51802—Rubber stamps	85	
52264— " "	1 25	
53095— " "	1 80	
53955— " "	1 05	
53836— " "	1 10	
54923— " "	2 45	
55985— " "	15	
		$19 80

CENTRAL PRISON FARM, GUELPH, ONT.

55395—Brooms	$34 00	
		$34 00

CANADA IRON CORPORATION, LTD., MONTREAL, QUE.

50659—Car wheels	$1,264 88	
51133—Castings	23 55	
51440— "	126 03	
52177— "	76 28	
52324— "	98 43	
53519—Tire for locomotives	395 17	
54383—Castings	10 71	
		$1,995 05

CANADIAN FAIRBANKS-MORSE CO., LTD., TORONTO, ONT.

51109—Drills	$27 52	
51438—Packing	44 60	
51837—Claim No. 9585	3 00	
52326—Gasoline engines	1,334 62	
53417—Expenses *re* rossers	47 70	
53493—Repair parts	100 07	
53026—Freight charges	13 17	
53330—Knives for rossers	54 58	
54402—Pipe cutter	16 50	
55197—Stand pipe	38 40	
55380—Wheels and belts	110 03	
56121—Pump parts	625 00	
53835—Claim No. 8763	29 44	
54353—Repair parts	94 35	
54028— "	92 50	
54108—Graphite	6 38	
56228—Stand pipe, lighting cells, etc.	2,051 52	
		$4,689 38

J. CHARPENTIER, CONNAUGHT, ONT.

52557—Ties	$16 25	
		$16 25

CANADA PAINT CO., LTD., MONTREAL, QUE.

51127—Paints and varnishes	$392 05	
51436— " "	398 46	
52171— " "	222 99	
52322— " "	269 96	
53505— " "	126 00	
53328— " "	358 50	
54379— " "	253 76	
54110— " "	2 73	
54408— " "	306 54	
55399— " "	291 51	
55378— " "	399 59	
56105— " "	240 71	
56230— " "	62 50	
		$3,325 30

CANADA CEMENT CO., LTD., MONTREAL, QUE.

54185—Cement	$284 05	
53748— "	284 05	
54334— "	284 05	
55114— "	284 05	
55711— "	568 10	
		$1,704 30

CENTRAL WEST VIRGINIA & SOUTHERN RAILROAD, PHILADELPHIA, PA.

50739—Car service balance	$3 15	
		$3 15

CENTRAL OF GEORGIA RAILWAY, SAVANNAH, GA.

50785—Car repairs	$4 86	
50840— "	2 69	
51910— "	52	
53155— "	61	
56373—Car service balance	17 55	
55866—Car repairs	56	
56398—Car service balance	37 80	
		$64 59

CANADIAN OFFICE & SCHOOL FURNITURE CO., PRESTON, ONT.

56216—Ticket cash books	$ 16	
		$ 16

CANADIAN PACIFIC RAILWAY COMPANY'S TELEGRAPH, MONTREAL, QUE.

50943—Messages	$4 02	
51449— "	2 04	
51092— "	1 87	
51705— "	3 32	
52037— "	3 63	
52039— "	1 69	
51804— "	50	
52536—Telegraph interchange	1,450 60	
52684—Messages	41	
53024— "	87	
53676—Telegraph interchange	368 67	
54153—Messages	2 65	
54669— "	1 62	
54773—Telegraph interchange	312 10	
54894—Messages	6 91	
53423— "	1 03	
55228— "	3 07	
55272—Telegraph interchange	361 69	
56311— " "	537 46	
56315—Messages	7 06	
56443—Telegraph interchange	293 74	
56480— " "	440 44	
53379— " "	287 96	
53785— " "	287 45	
54794— " "	299 28	
		$4,680 08

CENTRAL ELECTRIC SUPPLY CO., LTD., TORONTO, ONT.

55392—Conduit	$35 70	
56232— "	104 16	
		$139 86

CLARKE & CLARKE, NORTH BAY, ONT.

51642—Alterations to bridges	$4,379 38	
		$4,379 38

CAMEL & CO., CHICAGO, ILL.

55391—Guides, etc.	$11 00	
		$11 00

H. V. CARTWRIGHT, MATHESON, ONT.

52950—Claim No. 9675	$3 45	
		$3 45

CAMPBELL & DEYELL, LTD., COBALT, ONT.

55946—Claim No. 9142	$25 33	
		$25 33

CHICAGO BRIDGE AND IRON WORKS, CHICAGO, ILL.

52948—Claim No. 9759	$1 40	
55788—Steel tower and tank	2,023 70	
		$2,025 10

CANADIAN CONSOLIDATED RUBBER CO., LTD., TORONTO, ONT.

50725—Hose, etc.	$316 58	
51452—Basin plugs	1 20	
51649—Rubber goods	27 07	
52004—Hose	3 67	
52739— "	77 02	
53067— "	236 10	
53750—Rubber goods	11 24	
50720—Hose	23 56	
51124— "	434 04	
51839— "	4 20	
52013—Claim No. 9529	69 60	
52183—Hose clamps and valves	75	
53876—Hose clamps	25 23	
53313—Rubber boots	9 21	
52890—Hose	17 24	
52906—Rubber bands	18 13	
52928—Hose and boots	25 19	
53148—Pump valves	5 93	
54107—Boots	19 74	
54187—Packing and hose	76 24	
54265—Boots	72 59	
54332—Hose	126 07	
54827—Boots	34 10	
54959—Hose	382 62	
55222—Tubing	105 11	
55384—Hose	51	
55737—Hose and boots	26 80	
55865—Hose and packing	30 69	
55963—Hose	43 43	
55768—Rubber goods, etc.	48 23	
55984—Hose and boots	35 92	
55974—Rubber goods, etc.	258 33	
		$2,566 34

CITIZENS' RECRUITING LEAGUE, TORONTO, ONT.

55792—Advertisement in programme	$25 00	
		$25 00

L. S. CLARKE, NORTH BAY, ONT.

56468—Ties	$90 50	
56468— "	73 85	
		$164 35

CHICAGO CAR HEATING CO., CHICAGO, ILL.

56236—Couplers, steam traps, etc.	$208 25	
		$208 25

CHICAGO, ROCK ISLAND & PACIFIC RY., CHICAGO, ILL.

50799—Car repairs	$59 44	
52259— "	6 75	
51912— "	118 34	
53147— "	16 47	
52832— "	12 05	
54017— "	5 89	
53910— "	8 84	
54748— "	96 37	
55237— "	35 56	
55150— "	10 25	
55196— "	53 05	
		$423 01

CANADIAN DETROIT LUBRICATOR CO., WINDSOR, ONT.

56238—Rubber packing	$2 90	
		$2 90

FRANK CALVELLO, NORTH BAY, ONT.

55385—Bread	$4 20	
		$4 20

W. L. CLARK, MONTEITH, ONT.

54834—Claim No. 10165	$25 00	
		$25 00

CANADA CREOSOTING CO., TORONTO, ONT.

54896—Creosoting ties	$106 75	
51428—Pine lumber	309 82	
		$416 57

THOS. CUTHBERTSON, McCOOL P.O., ONT.

54956—Donation *re* crossing	$25 00	
		$25 00

H. S. CAMPBELL, NORTH BAY, ONT.

55436—First Aid material	$30 89	
		$30 89

TOWNSHIP OF COLEMAN.

55544—*Re* decking overhead bridge	$90 47	
		$90 47

ALEX. CLARK, ENGLEHART, ONT.

50743—Donation *re* cow alleged killed	$25 00	
52765—Wood	9 00	
		$34 00

CAMPBELL & McDIARMID, NORTH BAY, ONT.

50745—Uniforms	$425 00	
51406— "	21 00	
52300— "	19 00	
		$465 00

JNO. CONNELLY, TOMIKO, ONT.

50934—Claim No. 8752	$9 00	
		$9 00

COCHRANE HARDWARE, LTD., NORTH BAY, ONT.

51099—Hardware supplies	$201 68	
51420— " "	156 71	
52173— " "	72 40	
52326— " "	58 95	
53775— " "	24 53	
53326— " "	47 75	
54375— " "	143 75	
53754— " "	4 66	
54118— " "	102 78	
54414— " "	343 75	
54660— " "	125 00	
55417— " "	175 31	
54428— " "	648 88	
56101— " "	217 23	
55980— " "	32 87	
56218— " "	525 42	
		$2,757 92

CLAY BELT PRINTING & PUBLISHING CO., LTD., COCHRANE, ONT.

54612—Advertising	$14 70	
55573— "	4 00	
		$18 70

JAS. CONNELLY, COBALT, ONT.

50688—Refund, account rent	$9 00	
		$9 00

CANADIAN WESTINGHOUSE CO., LTD., HAMILTON, ONT.

51129—Air brake material	$196 00	
51434— " "	181 49	
53387— " "	40 55	
53330—Generator	765 56	
54571—Repair parts	168 15	
54114—Air brake material	37 46	
54398— " "	82	
55401— " "	92 88	
55434—Transformers	414 60	
56113—Air brake material	111 00	
56222—Motor and air brake material	1,931 63	
		$3,940 14

CENTRAL FREIGHT ASSOCIATION, CHICAGO, ILL.

51148—Tariffs	$ 44	
51178— "	42	
52897— "	1 45	
53385— "	1 13	
53182— "	38	
54151— "	66	
54283— "	32	
54230— "	1 17	
54902— "	94	
55274— "	1 50	
56359— "	56	
		$8 97

M. G. CLARK, RELIEVING AGENT, NORTH BAY, ONT.

55143—Travelling expenses	$42 00	
55340— " "	14 00	
55933— " "	28 00	
		$84 00

COLORADO & SOUTHERN RY., DENVER, COL.

52482—Car repairs	$5 38	
53094— "	41 03	
53904— "	16 07	
54985— "	1 00	
55148— "	42	
55160— "	1 30	
55862— "	32	
		$65 52

CENTRAL VERMONT RY., ST. ALBANS, VT.

51309—Car service balance	$16 65	
50834—Car repairs	4 32	
51282—Car service balance	22 05	
52379— " "	18 00	
52483—Car repairs	2 62	
52486— "	3 61	
52554—Car service balance	7 65	

CENTRAL VERMONT RY., ST. ALBANS, VT.—*Continued.*

54536 Car service balance	$1 35	
55305— " "	4 50	
55594— " "	90	
56377— " "	3 15	
56114—Claim No. 9928	4 00	
56402—Car service balance	23 40	
		$112 20

COLLECTOR OF CUSTOMS, NORTH BAY, ONT.

50717—Duty on coal, etc.	$3,344 66	
50810— " "	3,511 89	
52033— " "	5,054 24	
52118— " "	3,799 05	
53261— " "	4,073 52	
53136— " "	3,056 62	
54257— " "	2,491 16	
54330— " "	2,476 38	
54941— " "	4 00	
55039— " "	1,690 18	
55288— " "	2,473 55	
56023— " "	2,313 19	
55970— " "	4,666 54	
		$38,954 98

CANADIAN CARBON CO., LTD., TORONTO, ONT.

53298—Batteries	$23 12	
		$23 12

CANADIAN NATIONAL CARBON CO., LTD., TORONTO, ONT.

56131—Batteries	$112 00	
56224— "	29 75	
		$141 75

CHICAGO, ROCK ISLAND & GULF RY., FORT WORTH, TEX.

53163—Car repairs	$ 54	
56031— "	28	
51303—Car service balance	4 95	
52257—Car repairs	18 30	
		$24 07

COCHRANE TELEPHONE CO., COCHRANE, ONT.

50754—Rental of telephone	$15 00	
52901— " "	15 00	
53824— " "	15 00	
55751— " "	15 00	
		$60 00

G. W. COOK, ELK LAKE, ONT.

51216—Repairs to telephone line	$1 75	
		$1 75

CHICAGO, PEORIA & ST. LOUIS R.R., SPRINGFIELD, ILL.

51305—Car service balance	$ 45	
		$ 45

THE CANADIAN ENGINEER, TORONTO, ONT.

50996—Subscription	$3 00	
		$3 00

CochraNE NorthLand Post, Cochrane, Ont.

51214—Advertising	$33 80	
53649— "	3 85	
55338— "	4 50	
		$42 15

Carolina, Clinchfield & Ohio Ry., Johnson City, Tenn.

51313—Car service balance	$4 05	
52558— " "	1 80	
53691— " "	3 60	
54740—Car repairs	1 67	
		$11 12

Dr. W. P. Caven, Toronto, Ont.

51962—Services rendered	$10 00	
		$10 00

Crouse Hinds Co. of Canada, Ltd., Toronto, Ont.

51076—Panel	$20 40	
53006—Fittings	33 80	
55735— "	7 02	
55892—Condulets	55 56	
52045— "	4 69	
55029— "	4 27	
		$125 74

Canadian Locomotive Co., Ltd., Kingston, Ont.

51125—Frames	$6 44	
51454—Draw bars	376 25	
51646—Converting locomotive No. 135—superheater	4,072 00	
51903—Converting locomotive No. 133—superheater	4,084 50	
52312—Repair parts	38 40	
52861—Converting locomotives Nos. 134 and 136—superheater	1,107 95	
53337—Repair parts	180 04	
54365—Foot plates	245 00	
54400—Smoke box rings	96 00	
55387—Repair parts	164 50	
56244— "	14 40	
		$10,385 48

Canadian Car & Foundry Co., Limited, Montreal, Que.

51135—Castings	$85 00	
51456—Repair parts	61 60	
52041— "	139 15	
52320— "	2 70	
53507—Brake beams	110 00	
53292—Castings	217 40	
54381—Centre plates	96 88	
54112—Castings	24 00	
55393— "	51 10	
55430—Brake beams	271 25	
56125—Castings	45 30	
56220—Repair parts	56 70	
		$1,161 08

Central Railway Signal Co., Pittsburg, Pa.

51150—Fuses	$91 00	
52163—Torpedoes	40 00	
53302—Fuses	52 00	
56107—Torpedoes	39 50	
56242— "	22 50	
		$245 00

COURIER PRINTING CO., ENGLEHART, ONT.

51212—Advertising	$20 31	
52040— "	2 40	
52304—Forms	12 00	
53308— "	12 50	
55278—Advertising	3 00	
		$50 21

CANADA GRIP NUT CO., LTD., MONTREAL, QUE.

51408—Grip nuts	$23 63	
53300— "	90 14	
54406— "	38 70	
		$152 47

CRAIN PRINTERS, LTD., ROLLA L. CRAIN CO., LTD., OTTAWA, ONT.

51422—Forms	$49 40	
52185— "	2 52	
53296— "	2 38	
54410— "	52 77	
55381—Binders	3 50	
		$110 57

CARIBONUM CO., LIMITED, TORONTO, ONT.

51424—Carbon paper	$2 53	
		$2 53

CARBORUNDUM CO., NIAGARA FALLS, N.Y.

51426—Wheel emery	$17 50	
52159— "	17 50	
		$35 00

CANADIAN GOLD CAR HEATING & LIGHTING CO., MONTREAL, QUE.

51430—Repair parts	$49 80	
52143— "	186 25	
52314— "	27 55	
52796—Equipment	350 00	
53334— "	55 77	
		$669 37

CARTER'S INK CO., MONTREAL, QUE.

51432—Ink	$87 98	
53318— "	2 75	
54361—Mucilage and carbon paper	39 70	
56113—Ink	16 50	
		$146 93

CANADIAN STEEL FOUNDRIES, LTD., MONTREAL, QUE.

51442—Couplers	$73 00	
52179— "	330 10	
52318—Knuckles, etc.	85 10	
53511—Wedges, couplers, etc.	90 61	
55438—Frogs	1,304 22	
53290—Couplers	387 00	
56129—Clevises	12 00	
		$2,282 03

CHARLTON AGRICULTURAL SOCIETY, CHARLTON, ONT.

51549—Donation, prize	$10 00	
		$10 00

CANADIAN BROTHERHOOD OF RAILROAD EMPLOYEES, TORONTO, ONT.

51559—Advertising	$10 00	
		$10 00

CANADIAN OIL COMPANIES, LTD., TORONTO, ONT.

51569—Claim No. 9170	$ 50	
		$ 50

CROWN RESERVE MINING CO., LTD., COBALT, ONT.

51571—Claim No. 8076	$7 81	
		$7 81

CANADIAN RAILWAY & MARINE WORLD, TORONTO, ONT.

51677—Copies of publication	$2 40	
52658—Subscription	28 00	
		$30 40

H. CARNEY, CAR DEPARTMENT, ENGLEHART, ONT.

51899—Travelling expenses	$11 00	
		$11 00

CANADIAN GENERAL ELECTRIC CO., LTD., TORONTO, ONT.

51137—Insulators	$39 60	
51446—Carbons, etc.	33 70	
52181—Electrical material	15 14	
52332— " "	66 61	
53501— " "	55 44	
53292— " "	16 06	
53899—Claim No. 9791	37 87	
54369—Electrical material	16 83	
54116—Fans, etc.	236 44	
54406—Electrical material	19 90	
55397— " "	8 26	
55382—Armature	74 13	
56117—Electrical material	128 85	
56258— " "	14 95	
		$763 78

COMMERCIAL UNION ASSURANCE CO., TORONTO, ONT.

54440—Premium, dwelling, Temagami	$23 40	
		$23 40

A. E. CAMPBELL, COBALT, ONT.

54837—Claim No. 9422	$9 28	
		$9 28

CASEY-COBALT SILVER MINING CO., LTD., TORONTO, ONT.

56118—Claim No. 10234	$11 38	
		$11 38

CANADA RAILWAY NEWS CO., LTD., TORONTO, ONT.

53647—Equipment supplies	$7 48	
54984—Meals supplied	7 00	
		$14 48

G. COPELAND & SONS, MIDLAND, ONT.

53786—Claim No. 9988	$3 00	
		$3 00

CANADIAN EXPRESS CO., MONTREAL, QUE.

52654—Express charges	$54 35	
54954— " "	278 95	
55668— " "	30 26	
56287— " "	19 55	
56462— " "	16 28	
		$399 39

CLEVELAND COPPER FERRULE CO., CLEVELAND, OHIO.

51117—Ferrules	$18 38	
55390— "	27 57	
		$45 95

CANADIAN W. A. ROGERS, LTD., TORONTO, ONT.

54355—Repairing reflector	$5 75	
54104—Replating silverware	96 18	
56103—Silverware	87 60	
54507—Replating reflector	5 75	
		$195 28

B. J. COGHLIN CO., LTD., MONTREAL, QUE.

51119—Springs	$131 95	
51414— "	171 33	
52167—Tail pockets	112 50	
53495—Springs	59 21	
53322— "	32 98	
54363— "	37 25	
		$545 22

JAS. A. COLE & CO., NORTH BAY, ONT.

51121—Lumber	$6 00	
52145—Lumber resawed	95 87	
54671—Sash	35 00	
		$136 87

CANADA METAL CO., LTD., TORONTO, ONT.

51123—Metals	$61 70	
51444— "	105 52	
52171— "	82 84	
52308— "	18 33	
53509— "	58 84	
53324— "	93 91	
54367— "	98 42	
54100— "	45 45	
55403— "	67 98	
55432— "	189 65	
56099— "	96 96	
56234— "	39 05	
		$958 65

A. W. CAVANAGH, TIE INSPECTOR, NORTH BAY, ONT.

50917—Travelling expenses	$9 80	
51745— " "	20 55	
51840— " "	21 60	
53037— " "	17 65	
53331— " "	10 55	
53220— " "	21 30	
54454— " "	8 85	
55103— " "	22 50	
55546— " "	22 30	
56271— " "	25 20	
56050— " "	21 80	
		$202 10

COBALT DAILY NUGGET, LTD., COBALT, ONT.

50941—Advertising	$72 02	
50564—Claim No. 9006	26 40	
51000—Advertising	15 75	
51074— "	57 92	
51210— "	29 51	
51800— "	18 01	
52038— "	4 60	
52122— "	15 00	
52895— "	17 16	
53186— "	20 69	
53592— "	16 08	
54289— "	27 57	
54677—Papers	60	
54464—Advertising	23 20	
54965— "	2 00	
55167— "	20 88	
55290— "	26 40	
55344— "	5 00	
56313— "	33 13	
		$431 92

W. H. COE MFG. CO., PROVIDENCE, R.I.

51115—Ribbon gold	$25 84	
51410—Gold leaf	64 49	
53312— " "	20 96	
54094—Ribbon gold	12 51	
55402—Ribbon aluminum	4 96	
56109—Ribbon gold	15 04	
		$143 80

CANADIAN SHOVEL & TOOL CO., HAMILTON, ONT.

51101—Shovels	$24 00	
50716— "	39 35	
53154— "	88 63	
55087— "	37 99	
54876— "	75 97	
55867— "	37 98	
		$303 92

CHARLES CHAPMAN CO., LONDON, ONT.

51103—Forms	$82 60	
51416— "	43 95	
52298— "	147 70	
53491— "	38 90	
53314— "	90 60	
54359— "	67 86	
54106— "	130 10	
55388— "	6 00	
		$607 71

CRUCIBLE STEEL CO. OF AMERICA, PITTSBURG, PA.

51105—Steel	$49 78	
51450— "	54 73	
52153— "	14 30	
54377— "	20 08	
55383— "	113 69	
		$252 58

CROSSEN CAR CO., LTD., COBOURG, ONT.

51107—Brake appliances	$81 00	
		$81 00

R. Carruthers, Thornloe, Ont.

55116—Switch sets	$79 05	
		$79 05

Canadian Pulp & Lumber Co., Latchford, Ont.

51821—Refund deposit on lumber siding	$500 00	
52009— " " "	500 00	
52587—Claim No. 9645	118 25	
55791— " No. 10272	2 00	
		$1,120 25

E. Chatwin, New Liskeard, Ont.

51706—Claim No. 8956	$7 00	
		$7 00

J. H. Cole, Matheson, Ont.

51710—Claim No. 9342	$3 60	
52952— " No. 9811	2 66	
		$6 26

C. Caldwell, Milberta, Ont.

53485—Wood	$15 50	
		$15 50

Canadian Mining & Finance Co., Timmins, Ont.

52124—Refund deposit on siding	$206 71	
53419—Refund on B/C No. 22956	1 00	
		$207 71

Construction Supply Co., Limited, Toronto, Ont.

52587—Claim No. 9082	$6 40	
		$6 40

Collector of Inland Revenue, Toronto, Ont.

52782—War tax stamps	$25 00	
		$25 00

Coal & Coke Ry., Elkins, W. Va.

53504—Car service balance	$4 50	
54575— " "	3 15	
		$7 65

S. J. Cherry, North Bay, Ont.

53381—Plumbing material	$ 85	
55666—Plumbing	17 79	
50998—Repairs to tank	98	
51955—Plumbing	64 32	
54679— "	18 20	
55404—Radiators	39 72	
		$141 86

Canadian Ramapo Iron Works, Ltd., Niagara Falls, Ont.

51093—Frogs and switches	$1,955 00	
52310—Steel slides	11 55	
53503— "	10 20	
53306—Switch stands	180 00	
		$2,156 75

CANADIAN H. W. JOHNS-MANVILLE CO., TORONTO, ONT.

54385—Speedometer	$150 00	
		$150 00

CHICAGO, INDIANA & SOUTHERN R.R., CLEVELAND, OHIO.

52493—Car repairs	$2 58	
53159— "	2 17	
		$4 75

COLUMBIA GRAPHOPHONE CO., TORONTO, ONT.

51095—Cylinder blanks	$10 00	
53487— "	12 30	
54287—Repair parts	2 02	
52304— "	14 14	
		$38 46

THE CONCRETE CEMENT AGE PUBLISHING CO., DETROIT, MICH.

54357—Subscription	$1 00	
		$1 00

CENTRAL NEW ENGLAND RY., NEW HAVEN, CONN.

53512—Car service balance	$9 90	
54583— " "	7 20	
		$17 10

CONSOLIDATED CAR HEATING CO., ALBANY, N.Y.

51097—Gaskets	$12 00	
51412— "	30 00	
53316— "	16 50	
55400— "	33 00	
56127— "	33 00	
		$124 50

CANADIAN FREIGHT ASSN., TORONTO, ONT.

50945—Proportion of expenses	$36 82	
51208— " "	39 12	
52043—Classifications	1 25	
52095—Proportion of expenses	35 84	
52899— " "	34 55	
53651— " "	35 47	
53184— " "	35 54	
54285— " "	35 97	
54673—Classifications	2 82	
54462—Publications	35 94	
55165—Proportion of expenses	34 45	
55276—Classifications	2 82	
55342—Proportion of expenses	35 60	
56178—Classifications	1 50	
56309—Tariffs	34 69	
		$402 38

CHICAGO, NEW YORK & BOSTON REFRIGERATOR CO., CHICAGO, ILL.

51286—Car service balance	$1 54	
		$1 54

CUDAHY REFRIGERATOR LINE, CHICAGO, ILL.

51290—Car service balance	$8 79	
52385— " "	12 86	
		$21 65

CHICAGO, TERRE HAUTE & SOUTH EASTERN RY., CHICAGO, ILL.

53693—Car service balance	$3 15	
52818—Car repairs	1 86	
53514—Car service balance	4 05	
55227—Car repairs	19	
55598—Car service balance	3 15	
		$12 40

MILTON CARR HARDWARE CO., SOUTH PORCUPINE, ONT.

50554—Claim No. 7256	$25 62	
		$25 62

CANADIAN CAR SERVICE BUREAU, MONTREAL, QUE.

50672—Proportion of expenses	$23 55	
51703— " "	30 14	
51806— " "	33 48	
52863— " "	42 04	
53421— " "	36 05	
53622— " "	32 85	
54675— " "	23 42	
54608— " "	27 59	
55099— " "	20 88	
55542— " "	20 23	
56317— " "	19 00	
		$309 23

CHARCOAL SUPPLY CO., TORONTO, ONT.

54347—Charcoal	$17 82	
56240— "	29 00	
52149— "	24 40	
55398— "	18 47	
56119— "	3 57	
		$93 26

COBALT TOWNSITE MINING CO., LTD., COBALT, ONT.

50551—Claim No. 7150	$34 11	
50661—Over-payment	1 00	
52973—Claim No. 7968	139 75	
		$174 86

R. H. CLEMENS, MONTEITH, ONT.

54275—Clearing station grounds, Porquis Jct.	$13 75	
55072—Claim No. 10157	9 80	
		$23 55

CENTRAL R. R. OF NEW JERSEY, JERSEY CITY, N. J.

50553—Claim No. 5968	$5 52	
50783—Car repairs	42	
51017— "	1 65	
52484— "	2 11	
52550—Car service balance	9 00	
53685— " "	11 70	
54713—Car repairs	57	
54991— "	42	
55868— "	63	
		$32 02

CANADIAN BILLINGS & SPENCER LTD., WELLAND, ONT.

54349—Wrenches	$18 28	
		$18 28

CHADWICK BRASS CO., LTD., HAMILTON, ONT.

54351—Brass tubing	$1 50	
		$1 50

R. CUDDY & CO., ENGLEHART, ONT.

53147—Wood	$7 50	
		$7 50

W. H. COX COAL CO., TORONTO, ONT.

52261—Coal	$1,268 31	
52036— "	748 95	
53268— "	153 39	
54967— "	832 90	
55199— "	1,421 70	
55461— "	452 20	
55983— "	218 28	
		$5,095 73

CHAMANDY BROS., COBALT, ONT.

52761—Claim No. 8555	$155 35	
		$155 35

CONDUITS CO., LTD., TORONTO, ONT.

52151—Elbow conduits	$15 67	
		$15 67

GEORGE CROWDER, MCCOOL, ONT.

52765—Claim No. 9591	$8 87	
		$8 87

CHISHOLM MOOKE MFG. CO., CLEVELAND, OHIO.

52159—Hangers	$2 03	
		$2 03

H. COLLINS, CANE, ONT.

52857—Pulpwood	$38 59	
54969—.. "	7 15	
		$47 74

I. COMEAU, COCHRANE, ONT.

52857—Pulpwood	$44 06	
		$44 06

H. COLES, OSSEO, ONT.

52778—Pulpwood	$27 11	
54969— "	7 15	
		$34 26

CENTRAL ELECTRIC CO., CHICAGO, ILL.

56020—Electrical material	$45 34	
		$45 34

TOWN OF COBALT, COBALT, ONT.

50460—Donation general purposes	$600 00	
		$600 00

TOWN OF COCHRANE, COCHRANE, ONT.

54986—Water supplied	$39 18	
		$39 18

DELAWARE, LACKAWANNA & WESTERN R.R., NEW YORK, N.Y.

50807—Car repairs	$1 74	
51317—Car service balance	29 25	
51034—Car repairs	1 84	
51296—Car service balance	133 20	
51779—Car repairs	2 45	
52389—Car service balance	164 55	
53790—Claim No. 8950	6 38	
52500—Car repairs	1 13	
52564—Car service balance	283 50	
53699— " " "	192 60	
52834—Car repairs	1 84	
53520—Car service balance	123 75	
54029—Car repairs	89	
54589—Car service balance	49 95	
53926—Car repairs	80	
54542—Car service balance	90	
54993—Car repairs	1 30	
55311—Car service balance	13 05	
55162—Car repairs	27 25	
55604—Car service balance	8 55	
55793—Claim No. 10083	6 25	
56387—Car service balance	29 25	
56412— " " "	19 35	
		$1,099 77

DULUTH, WINNIPEG & PACIFIC RAILWAY, TORONTO, ONT.

50809—Car repairs	$12 31	
51033— " "	2 64	
51321—Car service balance	1 80	
51781—Car repairs	1 97	
52501— " "	4 37	
52502— " "	10 75	
52810— " "	45	
54027— " "	7 17	
54752— " "	2 20	
56391—Car service balance	30 36	
55876—Car repairs	74	
		$74 76

DULUTH & IRON RANGE R.R., DULUTH, MINN.

51918—Car repairs	$1 00	
53165— " "	1 00	
		$2 00

DENVER & RIO GRANDE R. R., DENVER, COLO.

50801—Car repairs	$ 65	
50582— " "	7 57	
52496— " "	1 01	
53167— " "	54	
53753—Ticket balance	15 03	
54031—Car repairs	4 69	
53928— " "	1 48	
55313—Car service balance	45	
55166—Car repairs	2 73	
		$34 15

DELAWARE & HUDSON CO., NEW YORK, N.Y.

50805—Car repairs	$7 56	
51315—Car service balance	16 30	
51294— " " "	17 55	
52387— " " "	36 00	
52497— " " "	3 46	
52562—Car repairs	1 55	
51920— " "	81	
53157— " "	37	
53697—Car service balance	7 65	
52812—Car repairs	6 87	
53518—Car service balance	1 35	
54587— " " "	1 35	
55347—Ticket balance	1 34	
55589—Car repairs	52	
55164— " "	2 16	
55602—Car service balance	10 90	
56385— " " "	90	
56425— " " "	76	
		$117 40

DETROIT & TOLEDO SHORE LINE R.R., DETROIT, MICH.

50803—Car repairs	$1 96	
53930— " "	2 12	
55872— " "	1 76	
		$5 84

DOME MINES, LIMITED, SOUTH PORCUPINE, ONT.

50557—Claim No. 9182, siding rebate	$62 00	
50567— " " 8915	6 72	
50936— " " 9479 and 9480, siding rebate	82 00	
51094— " " 9408, siding rebate	56 00	
51841— " " 9582 "	66 00	
51716— " " 8931 "	6 70	
52591— " " 9646 siding rebate	54 00	
52959— " " 9754 "	84 00	
52975— " " 9740 "	284 40	
53903— " " 9903 and 9982, siding rebate	176 00	
54060— " " 10109, siding rebate	42 00	
54840— " " 8952 "	46 80	
55074— " " 10230 "	42 00	
55681— " " 9632 and 10265, damage to pulley and siding rebate	78 30	
55918— " " 10299	2 59	
56120— " " 10409 and 10364, siding rebate	228 00	
		$1,317 51

B. W. DUNNETT & CO., OTTAWA, ONT.

50561—Claim No. 8395	$4 16	
51718— " " 9443	51	
53837— " " 9306 and 9739	15 73	
53865— " " 9947	23 80	
53905— " " 9713 and 9781	15 71	
53950— " " 10001	4 98	
54843— " " 9538	1 96	
54883— " " 9780	8 63	
55076— " " 10213	4 40	
55795— " " 9442	18 27	
		$98 15

H. C. Dunbar, Haileybury, Ont.

50559—Claim No. 8422	$4 80	
52767— " " 8973	6 99	
52966— " " 9475 and 9471	3 34	
54885— " " 9863	6 93	
55916— " " 9750	14 27	
		$36 33

Delaney & Petit Co., Ltd., Toronto, Ont.

51151—Emery cloth	$22 01	
51564— "	29 17	
52199—Glue, etc.	14 00	
52344— "	14 00	
53523—Sand paper	8 52	
53354—Glue and emery powder	15 63	
54393—Flint paper	4 12	
54120— "	3 83	
55429— "	7 94	
55420—Emery cloth	30 88	
		$150 10

Henry Disston & Sons, Limited, Toronto, Ont.

51474—Hack saw blades	$10 38	
52191— " "	3 18	
52336— " "	3 92	
53346— " "	3 64	
55405— " "	5 06	
55408— " "	6 94	
56260— " "	3 92	
		$37 04

Dominion Reduction Co., Cobalt, Ont.

51575—Claims, overcharge	$194 70	
51843— " "	149 69	
51712— " "	61 17	
53705— " "	286 57	
52773— " "	269 84	
52977— " "	263 79	
52724— " "	447 87	
53792— " "	132 01	
54064— " "	62 31	
		$1,867 95

Dome Lake Mining & Milling Co., Ltd., Porcupine, Ont.

54736—Claim No. 9890	$4 40	
		$4 40

Dodge Manufacturing Co., Limited, Toronto, Ont.

54122—Pulleys	$4 93	
56135— "	23 47	
		$28 40

Dougall Varnish Co., Limited, Montreal, P.Q.

54191—Varnish	$102 90	
53880— "	78 40	
54964— "	39 20	
55869 "	29 40	
		$249 90

DAVIE BROS., EABLTON, ONT.

50570—Claim No. 8634	$40 87	
52954— " 9837	4 40	
53839— " 9760	2 00	
53901— " 9761	1 21	
55914— " 9762	4 86	
		$53 34

DOMINION PAINT WORKS, LIMITED, WALKERVILLE, ONT.

54420—Paint	$539 25	
		$539 25

DOMINION WHEEL & FOUNDRIES, LIMITED, TORONTO, ONT.

52193—Cylinder heads	$9 52	
52334—Wheels, etc.	1,565 73	
52539—Castings, etc.	788 13	
53352— "	283 22	
54397— "	198 24	
54128—Wheels and castings	240 19	
55427—Castings	490 25	
55478—Wheels and castings	93 14	
56149—Castings	226 36	
56250— "	1,077 99	
		$4,972 16

DOMINION OF CANADA GUARANTEE & ACCIDENT INSURANCE CO., TORONTO, ONT.

55005—Ticket balance	$1 10	
55642— " "	3 99	
56427— " "	2 07	
56448— " "	1 10	
		$8 26

DOMINION STEEL FOUNDRY CO., LIMITED, HAMILTON, ONT.

53527—Castings	$40 38	
53358— "	39 05	
54416— "	13 72	
55421— "	15 85	
55442—Wedge	5 84	
56143—Express charges on pattern	1 40	
56254—Castings	196 54	
		$312 78

DULUTH, SOUTH SHORE & ATLANTIC RY., MARQUETTE, MICH.

51031—Car repairs	$5 26	
50850— "	11 31	
52499— "	13 32	
53169— "	1 38	
53096— "	21 10	
54025— "	2 04	
53932— "	8 40	
54750— "	5 92	
55168— "	3 59	
55206— "	7 11	
56037— "	6 57	
56287— "	10 35	
55874— "	1 40	
56414—Car service balance	5 85	
		$103 60

DETROIT & MACKINAC RY., DETROIT, MICH.

51317—Car service balance	$ 90	
		$ 90

DETROIT, TOLEDO & IRONTON RY., DETROIT, MICH.

52391—Car service balance	$4 05	
52498—Car repairs	1 85	
52566—Car service balance	1 80	
53171—Car repairs	28	
		$7 98

G. H. DICKSON, ENGINEERING DEPT., NORTH BAY, ONT.

50674—Travelling expenses	$6 50	
52234— " "	2 50	
53343— " "	23 50	
54753— " "	4 50	
55061— " "	3 35	
56058— " "	3 15	
		$43 50

DUNER CO., CHICAGO, ILL.

51141—Repair parts	$3 12	
55414— "	6 18	
56141— "	1 30	
		$10 60

D. DUFF, THORNLOE, ONT.

51497—Switch sets	$44 80	
		$44 80

DOMINION RADIATOR CO., TORONTO, ONT.

51143—Grates	$16 04	
51478—Grates	4 04	
		$20 08

W. R. DUFF, TORONTO, ONT.

50506—Services rendered	$50 00	
		$50 00

DOMINION ENVELOPE CO., LIMITED, TORONTO, ONT.

51145—Envelopes	$46 01	
51466— "	10 75	
52342— "	17 50	
53515— "	28 95	
53342— "	8 60	
54389— "	32 85	
55425— "	29 15	
56133— "	35 40	
		$209 21

THOS. DAVIDSON MFG. CO., LIMITED, MONTREAL, QUE.

51147—Torches	$4 50	
		$4 50

WM. DAVIES CO., LIMITED, TORONTO, ONT.

50572—Claim No. 9266	$65 40	
		$65 40

DOMINION GLASS CO., LIMITED, MONTREAL, QUE.

51149—Chimneys	$15 00	
51472— "	6 60	
52049— "	15 29	
51812— "	3 53	
53521— "	9 60	
53156— "	5 88	
54271— "	9 41	
53882— "	3 53	
55411— "	12 00	
54966— "	2 65	
		$83 49

J. DRINKWATER, SUPERVISOR, COCHRANE, ONT.

51259—Travelling expenses	$6 20	
51747— " "	12 05	
51842— " "	9 80	
52230— " "	9 15	
53339— " "	12 30	
53228— " "	9 00	
54747— " "	9 50	
54716— " "	8 35	
55063— " "	5 10	
55244— " "	8 65	
56275— " "	4 65	
56054— " "	5 60	
		$100 35

DOMINION CHAIN CO., LIMITED, MONTREAL, QUE.

51707—Cotter pins	$7 73	
53047— "	1 52	
52784— "	1 62	
53758— "	5 18	
53878— "	2 22	
54356— "	4 04	
55201— "	4 31	
55409— "	4 26	
55422— "	2 45	
56145— "	5 98	
		$39 31

DRUMMOND, MCCALL & CO., LIMITED, MONTREAL, QUE.

52189—Steel tubing	$22 87	
53525— "	18 67	
53356— "	107 28	
54399— "	48 93	
54062—Claim No. 8590	14 40	
55412—Boiler tubes	60 00	
56139—Boiler tubes	139 12	
55920—Claim No. 10,226	6 66	
		$417 93

EUGENE DIETZGEN CO., LIMITED, TORONTO, ONT.

56151—Tracing linen	$35 26	
		$35 26

W. J. DOUGLASS, ROAD FOREMAN, NORTH BAY, ONT.

50699—Travelling expenses	$27 65	
51263— " "	22 45	
51186— " "	20 90	
52100— " "	23 05	

W. J. Douglass, Road Foreman, North Bay, Ont.—*Continued.*

52236—Travelling expenses	$14 95	
53332— " "	17 00	
53226— " "	14 85	
54749— " "	15 40	
54698— " "	22 50	
55147— " "	22 10	
55298— " "	22 20	
55937— " "	23 25	
56076— " "	23 75	
		$270 05

R. A. Douglass, Matheson, Ont.

50812—Clearing Matheson townsite	$201 25	
		$201 25

Dominion Linens, Limited, Peterboro, Ont.

52350—Towels	$11 70	
54126— "	14 40	
55418— "	14 40	
56147— "	38 40	
		$78 90

Dominion Printing & Loose Leaf Co., Ottawa, Ont.

54391—Files	$5 40	
51476—Files and binders	57 40	
52201— " "	15 00	
53338— " "	9 90	
54412— " "	27 90	
55410— " "	19 80	
52368— " "	12 60	
		$148 00

T. Dell, Kenabeek, Ont.

52690—Ties	$73 20	
54259— "	96 30	
54259— "	56 40	
		$225 90

Dagenais & Poisson, North Cobalt, Ont.

52769—Claim No. 8430	$4 38	
		$4 38

Defiance Machine Co., Rochester, N.Y.

53513—Ink	$ 75	
		$ 75

"Dunlops," Toronto, Ont.

53265—Funeral wreath	$20 00	
		$20 00

H. Day, B. & B. Dept., North Bay, Ont.

53341—Travelling expenses	$11 15	
53222— " "	7 85	
54751— " "	10 50	
55059— " "	14 80	
55145— " "	11 30	
55242— " "	13 35	
55925— " "	14 95	
56056— " "	17 80	
		$101 70

C. A. Duff, Renfrew, Ont.

54813—Claim No. 10075	$4 77	
54838— " 10076 and 10077	18 59	
56122— " 10136	17 96	
		$41 32

J. Dent, Nellie Lake, Ont.

52557—Ties	$23 53	
52690—Ties	13 40	
		$36 93

L. A. Deagle, Relieving Agent, Porquis Junction, Ont.

53039—Travelling expenses	$11 25	
		$11 25

J. Deschamp, Cobalt, Ont.

52557—Telegraph poles	$40 00	
52507— "	29 20	
52507— "	10 60	
		$79 80

L. Dodoro, Timmins, Ont.

51714—Claim No. 8985	$3 04	
		$3 04

Dominion Register Co., Limited, Toronto, Ont.

52360—Forms	$30 00	
		$30 00

Delta-Star Electric Co., Chicago, Ill.

52187—Cables	$43 20	
56264—Electrical material	27 45	
		$70 65

P. E. Doal, Matheson, Ont.

55105—Carpenter work	$8 60	
		$8 60

R. Dartt, Englehart, Ont.

52160—Bread	$0 96	
		$ 96

Dr. R. J. Dwyer, Toronto, Ont.

51968—Services rendered	$40 00	
		$40 00

G. W. Duncan, North Bay, Ont.

51139—Vegetables	$40 70	
51458—Vegetables	3 00	
52338—Groceries	51 17	
53350— "	80 50	
54395— "	98 95	
54130— "	87 55	
54418— "	20 75	
55423— "	130 83	
55416— "	102 85	
56137— "	36 05	
56252— "	70 25	
		$722 60

J. R. Dixon, Ottawa, Ont.

50566—Claim No. 9278	$10 00	
		$10 00

Jas. Doig & Sons, Latchford, Ont.

50631—Claim No. 8764	$9 99	
51577— " 9345 and 9346	11 40	
51771— " 8543	22 83	
		$44 22

S. Dodare, Timmins, Ont.

50606—Claim No. 8984	$3 14	
		$3 14

W. J. Damp, Boiler Inspector, North Bay, Ont.

50697—Travelling expenses	$4 45	
51261— " "	12 15	
51846— " "	8 30	
52232— " "	8 05	
53335— " "	4 80	
54745— " "	7 15	
56273— " "	9 80	
56060— " "	9 25	
		$63 95

F. P. Dwyer, New York, N.Y.

55923—Refund telegraph charges	$1 05	
		$1 05

R. Deadman, Motive Power Dept., North Bay, Ont.

50919—Travelling expenses	$14 40	
		$14 40

E. Dommett, McCool P.O., Ont.

53777—Ties	$25 20	
56468—Ties	8 40	
		$33 60

E. Desormeau, Nushka, Ont.

53777—Ties	$46 80	
54259—Ties	30 00	
		$76 80

Durham & Southern Railway, Durham, N.C.

53038—Car repairs	$1 08	
54995—Car repairs	1 41	
		$2 49

Dominion Express Co., Montreal, Que.

53078—Proportion of telephone rental	$20 00	
54436—Refund of duplicate payment of account	35 00	
54943—Express charges	9 12	
56443—Express charges	66 96	
		$131 08

J. R. Doyle, North Bay, Ont.

53340—Oils and gasoline	$13 75	
		$13 75

DESALES MFG. CO., MONTREAL, QUE.

53344—Wipers and cotton	$45 75	
55440— " "	44 47	
56262— " "	46 50	
		$136 72

R. E. DIETZ CO., NEW YORK, N.Y.

53348—Lamps	$9 00	
		$9 00

DUNLOP TIRE & RUBBER GOODS CO., LTD., TORONTO, ONT.

54189—Rubber tiling	$176 47	
53756—Hose	40 73	
55007—Hose	37 22	
		$254 42

WM. DINSMORE, IROQUOIS FALLS, ONT.

51062—Pulpwood destroyed by fire	$6 00	
		$6 00

ADAM DOOL, TROUT MILLS, ONT.

51068—Donation *re* cow alleged killed	$25 00	
		$25 00

DESPATCH & TRIBUNE, NORTH BAY, ONT.

51218—Advertising	$54 20	
53040— "	8 00	
53336— "	6 00	
		$68 20

DAYTON MANUFACTURING CO., DAYTON, OHIO.

51460—Crommetts	$6 96	
52346—Keys	96	
54124—Car parts	89 89	
56256—Catches	3 84	
55407—Coach fittings	2 24	
		$103 89

W. V. DAWSON, LIMITED, MONTREAL, QUE.

51462—Forms	$18 50	
54387— "	17 00	
		$35 50

DOMINION FLOOR & WALL TILE CO., LIMITED, MONTREAL, QUE.

51468—Floor Tiles	$ 85	
		$ 85

R. DOUGHTY, HILLVIEW, ONT.

52008—Wood	$22 20	
		$22 20

JOS. DIXON CRUCIBLE CO., JERSEY CITY, N.J.

51470—Graphite	$5 40	
		$5 40

H. B. J. Doyle, North Bay, Ont.

52051—Groceries	$5 00	
		$5 00

S. Davis, Motive Power Dept., North Bay, Ont.

52097—Travelling expenses	$12 05	
51844— " "	11 10	
53337— " "	10 65	
53224— " "	9 45	
54714— " "	2 80	
		$46 05

J. L. Englehart, Chairman, Toronto, Ont.

Honorarium	$2,500 00	
Remuneration	3,909 66	
Expenses	798 00	
		$7,207 66

T. Eaton Co., Limited, Toronto, Ont.

50465—Clock	$6 00	
50578—Claim No. 8819	2 40	
51480—Carpets	109 50	
51722—Claim No. 9532	60	
52354—Linens for Private Cars	435 19	
55433—Curtain materials	45 00	
		$598 69

Energite Explosives, Limited, Montreal, Que.

50563—Claim No. 9141	$10 00	
51720— " 9487	6 16	
		$16 16

W. Ewing Co., Limited, Montreal, Que.

50565—Claim No. 8459	$1 00	
		$1 00

Erie Railroad, New York, N.Y.

50811—Car repairs	$2 97	
51035— "	72	
51323—Car service balance	15 30	
50856—Car repairs	17 74	
50938—Claim No. 8427	42 35	
51298—Car service balance	68 85	
52393— " "	30 35	
52503—Car repairs	5 22	
52504— "	12 23	
52568—Car service balance	57 60	
53173—Car repairs	33 35	
53701—Car service balance	27 95	
53098—Car repairs	7 46	
53524—Car service balance	12 15	
54033—Car repairs	8 07	
54643—Car service balance	2 16	
53924—Car repairs	27 72	
54997— "	20 24	
55170— "	19 82	
56393—Car service balance	25 65	
55889—Car repairs	1 96	
		$439 86

E. B. Eddy Co., Limited, Hull, Que.

51157—Paper and matches	$29 66	
51482— " "	28 19	
52205— " "	42 19	
52352— " "	14 66	
53531— " "	39 55	
53360— " "	14 66	
54401— " "	19 91	
54424— " "	18 41	
55431— " "	14 66	
55446—Fibre and matches	42 80	
56153—Paper	14 66	
56266— "	14 66	
		$294 01

East End Hardware, North Bay, Ont.

55444—Door locks	$1 00	
		$1 00

Edwards & Bevins, New Liskeard, Ont.

53953—Claim No. 9879	$1 60	
		$1 60

E. H. Erickson Artificial Limb Co., Minneapolis, Minn.

53732—Artificial limb, amount on account	$25 00	
55753—Balance	75 00	
		$100 00

Wm. English, Tie Inspector, North Bay, Ont.

50921—Travelling expenses	$6 35	
51749— " "	24 40	
51848— " "	20 70	
52198— " "	23 85	
52345— " "	26 80	
53232— " "	18 75	
54529— " "	26 30	
54456— " "	29 95	
55107— " "	25 85	
55548— " "	26 60	
56277— " "	20 80	
56062— " "	20 60	
		$270 95

George Earl, M. M. Dept., North Bay, Ont.

51188—Travelling expenses	$2 00	
51850— " "	13 75	
52238— " "	10 50	
53347— " "	9 65	
53230— " "	4 80	
54755— " "	9 60	
54718— " "	5 30	
55246— " "	3 70	
55939— " "	17 40	
56078— " "	16 90	
		$93 60

Edwards, Morgan & Co., Toronto, Ont.

51220—Services rendered	$361 75	
		$361 75

EASTERN CANADIAN PASSENGER ASSOC., MONTREAL, QUE.

51222—Proportion of expenses	$10 92	
52099— " "	15 38	
52044— " "	14 61	
53197— " "	16 04	
54155— " "	7 05	
54032— " "	6 27	
55109— " "	9 09	
54388— " "	2 54	
55987— " "	8 88	
56180— " "	6 39	
		$97 17

ENGLEHART DRUG STORE, ENGLEHART, ONT.

51870—Carbolic acid	$2 00	
		$2 00

EMPLOYERS' LIABILITY ASSURANCE CO., TORONTO, ONT.

50749—Refund premium	$1 06	
50690—Premium on bond	162 96	
51868— " "	153 52	
55798— " "	106 33	
		$423 87

N. M. ENGLAND, NEW LISKEARD, ONT.

50580—Claim No. 8887	$15 25	
		$15 25

J. EYDT, COBALT, ONT.

50576—Claim No. 8830	$5 35	
		$5 35

ELGIN, JOLIET & EASTERN RY., CHICAGO, ILL.

50854—Car repairs	$5 15	
52505— "	99	
52775—Claim No. 9093	8 72	
54754—Car repairs	11 73	
55172— "	4 42	
		$31 01

ELK LAKE POWER CO., LIMITED, ELK LAKE, ONT.

50692—Current	$1 10	
51711— "	2 75	
54715— "	5 10	
54614— "	4 75	
		$13 70

EL PASO & SOUTH WESTERN SYSTEM, NEW YORK, N.Y.

50813—Car repairs	$0 28	
55878— "	54	
		$0 82

F. EATON, HOMER SIDING, ONT.

52857—Pulpwood	$60 12	
		$60 12

S. ERRET, CLERK 3RD DIVISION COURT, ENGLEHART, ONT.

52867—*Re* action J. B. Flagler	$20 55	
		$20 55

ERIE TOOL WORKS, INCORP., ERIE, PA.

53533—Vise	$2 83	
		$2 83

ENGLEHART & DISTRICT AGRICULTURAL SOCIETY, ENGLEHART, ONT.

52922—Donation for prizes	$25 00	
		$25 00

MRS. A. EARL, NORTH BAY, ONT.

52958—Claim No. 7302	$6 00	
		$6 00

B. F. ELWELL GLUE CO., ROCKFORT, MASS.

51153—Glue	$6 50	
52203— "	13 00	
		$19 50

G. ELIAS & BRO., INC., BUFFALO, N.Y.

51155—Lumber	$500 15	
		$500 15

J. C. EAMON, ROAD DEPT., NORTH BAY, ONT.

50510—Expenses	$11 70	
		$11 70

TOWN OF ENGLEHART, ENGLEHART, ONT.

50539—Donation—proportion cost waterworks system	$4,572 09	
53150— " " " " "	1,830 40	
		$6,402 49

C. L. FERGUSON, PAYMASTER, NORTH BAY, ONT.

50663—Settlement *re* alleged injuries, C. J. Calvin	$25 85
50665— " " " J. T. Cox	4 85
50879—Payrolls	90,359 50
51453—Passenger refunds	268 90
51455—Disbursements, postage, etc.	60 31
50464—Settlement alleged injuries, B. Diamant	130 00
50512— " " " T. W. Beddingfield	36 33
51052—Payrolls	78,052 06
51152—Disbursements, postage, etc.	7 74
51224— " "	70 49
51579—G. Tolorico, Claim No. 9465	25 00
51645—Settlement, *re* alleged injuries, D. Dewan	25 00
51713—Passenger refunds	193 80
51987—Travelling expenses	3 55
52015—Payrolls	72,621 29
52263—Disbursements, postage, etc.	61 66
52265—Settlement *re* alleged injuries, G. M. Parker	175 00
51872—Passenger refunds	131 58
52084—Payrolls	68,810 17
52216—Law costs *re* A. Bernier	50 00
52218—Settlement, A. Bernier, *re* alleged damages by water	250 00
52905—Disbursements, postage, etc.	51 65
53267—Payrolls	71,140 58
53273—Passenger refunds	151 45
53425—Disbursements, postage, etc.	297 84
53122—Payrolls	65,145 66
53188—Disbursements, postage, etc.	140 65
53594—Passenger refunds	206 80

C. L. Ferguson, Paymaster, North Bay, Ont.—*Continued.*

54255—Payrolls	$73,638 01	
54291—Disbursements, postage, etc.	94 32	
54539—Passenger refunds	172 20	
53828—Arbitration fee, Claim No. 7670	10 00	
54340—Payrolls	76,446 25	
54470—Expenses	5 15	
54472—Disbursements, postage, etc.	277 54	
55015—Payrolls	80,343 69	
55111—Disbursements, postage, etc.	89 27	
55575—Passenger refunds	159 85	
55130—Payrolls	79,984 55	
55292—Disbursements, postage, etc.	72 00	
55670—Passenger refunds	77 85	
55710—Settlement *re* alleged injury R. G. Clarke	223 60	
55907—Payrolls	80,389 99	
56449—Disbursements, postage, etc.	102 70	
55776—Donation—C. A. Deeks—cow,alleged killed	60 00	
55968—Payrolls	82,030 48	
56182—Disbursements, passenger refunds	304 05	
		$922,979 21

L. M. Ferguson, T. & T. Dept., North Bay, Ont.

50979—Travelling expenses	$8 75	
51004— " "	7 75	
52101— " "	4 95	
53353— " "	18 20	
53236— " "	12 40	
55149— " "	31 35	
55304— " "	8 05	
56295— " "	4 25	
		$95 70

S. J. Faught, Supervisor, Englehart, Ont.

51265—Travelling expenses	$7 15	
51190— " "	9 85	
51850— " "	16 50	
52238— " "	17 85	
53349— " "	19 15	
53234— " "	19 15	
54757— " "	17 00	
54720— " "	10 90	
55065— " "	17 60	
52248— " "	18 05	
56279— " "	16 75	
56064— " "	16 25	
		$186 20

Farrell Engineering Co., Limited, North Bay, Ont.

51587—Claim No. 9171	$7 21	
		$7 21

Fraser & Chalmers Co. of Canada, Ltd., Montreal, Que.

52777—Claim No. 9080	$9 77	
54066— " 9584	18 61	
55797— " 9884	15 69	
		$44 07

Forest City Paving & Construction Co., London, Ont.

52853—Settlement *re* contracts	$1,267 50	
		$1,267 50

S. Friberger, Nushka, Ont.

52857—Pulpwood	$40 96	
52882— "	10 24	
		$51 20

A. L. Fradette, Cobalt, Ont.

53099—Uniform	$25 00	
		$25 00

W. J. Fitzpatrick, Nahma, Ont.

53251—Pulpwood	$49 31	
		$49 31

Foster Pottery Co., Limited, Hamilton, Ont.

54441—Flower pots	$9 20	
		$9 20

Thos. Firth & Sons, Limited, Toronto, Ont.

53894—Steel	$38 60	
		$38 60

Fruit Growers' Express Inc., Chicago, Ill.

54591—Car service balance	$2 35	
54544— " "	5 41	
55315— " "	1 69	
		$9 45

F. & L. Lawn Mower Co., Richmond, Ind.

55435—Discs	$3 00	
		$3 00

Fletcher Mfg. Co., Limited, Toronto, Ont.

55437—Cooking utensils	$9 10	
		$9 10

Feldman Bros., Krugerdorf, Ont.

54842—Claim No. 10051	$11 16	
		$11 16

Farmers' Advocate and Home Magazine, London, Ont.

54990—Advertising	$45 00	
		$45 00

A. Z. Fournier, Schumacher, Ont.

55795—Claim No. 10177	$2 20	
		$2 20

B. Forget, Earlton, Ont.

56073—Donation *re* cow alleged killed	$25 00	
		$25 00

R. Frank, Iroquois Falls, Ont.

52557—Ties	$11 05	
52690—Ties	6 40	
52857—Pulpwood	49 92	
		$67 37

FORD MOTOR CO. OF CANADA, LIMITED, FORD, ONT.

51724—Claim No. 9319	$3 98	
		$3 98

FINDLAY BROS. CO., LIMITED, CARLETON PLACE, ONT.

52356—Castings	$0 78	
		$0 78

FORSYTHE BROS. CO., CHICAGO, ILL.

54403—Sash ratchets	$57 60	
		$57 60

FROST WIRE FENCE CO., LIMITED, HAMILTON, ONT.

54405—Wire fence	$1,191 85	
53762—Wire fence	3 88	
55739—Gates	6 76	
		$1,202 49

F. S. FOSDICK, NORTH BAY, ONT.

54616—Rubber stamps	$ 94	
55173—Rubber stamps	56	
		$1 50

FORT WORTH & DENVER CITY RAILWAY, FORT WORTH, TEXAS.

54758—Car repairs	$0 61	
		$0 61

W. FIELD, EARLTON, ONT.

55116—Fence posts	$53 55	
		$53 55

FROTHINGHAM & WORKMAN, LIMITED. MONTREAL, QUE.

51126—Iron	$15 78	
52010— "	61 45	
52892— "	28 33	
53869— "	57 82	
53760—Steel plates	11 46	
54829—Lowmoor iron	12 63	
55203—Iron	56 91	
55318— "	37 67	
56289— "	11 57	
		$293 62

J. FENNESSY, HAILEYBURY, ONT.

51585—Claim No. 8999	$3 20	
51726— " 9334	1 21	
53595— " 9579	95	
53907— " 9925	99	
53794— " 9920	86	
54887— " 10066	1 29	
56124— " 10407	7 65	
		$16 15

J. FILIATRAULT, PORQUIS JUNCTION, ONT.

52557—Ties	$21 30	
52690— "	10 50	
53777— "	7 10	
53777— "	3 50	
54259— "	96 00	
54259— "	60 80	
		$199 20

FORT DODGE, DES MOINES & SOUTHERN R.R. CO., BOONE, IA.

51300—Car service balance	$8 55	
54593— " "	5 85	
54756—Car repairs	2 01	
		$16 41

FOLEY, WELCH & STEWART, COCHRANE, ONT.

51581—Claim No. 8875	$2 26	
		$2 26

FOWKE & GERRARD, CHARLTON, ONT.

51583—Claim No. 8859	$6 76	
54889— " 9944	4 60	
50582— " 8906	4 25	
55078— " 10160	3 25	
55922— " 10263	1 00	
		$19 86

FERGUSON & MCFADDEN, RENFREW, ONT.

50477—Claim No. 8742	$6 30	
52592— " 9350	4 12	
		$10 42

D. FASKEN, TORONTO, ONT.

51827—Lots 562-573, Temagami, Ont.	$1,000 00	
		$1,000 00

A. A. FRASER, ENGINEERING STAFF, NORTH BAY, ONT.

51987—Travelling expenses	$37 55	
52242— " "	5 70	
54223— " "	6 20	
54722— " "	6 85	
55250— " "	8 50	
56096— " "	6 50	
53351— " "	22 95	
		$94 25

FREIGHT CLAIMS ASSOCIATION, RICHMOND, VA.

52046—Copies of Rules	$1 20	
54468—Annual assessment	15 00	
		$16 20

GRAND TRUNK RY. SYSTEM, MONTREAL, QUE.

50479—Claims	$30 33	
50527—Interline freight	3,000 00	
50533— " "	2,000 00	
50567—Claims	254 94	
50667—Interline freight	3,000 00	
50669—Proportion settlement *re* alleged injuries, P. Menoff, North Bay	33 33	
50815—Car repairs	153 30	
50897—Interline freight	2,500 00	
51037—Car repairs	143 85	
51233—Profits from operation of stock yards, North Bay	352 83	
51325—Car service balance	2,527 30	
51379—Ticket balance	568 62	
51397—Car repairs	1 05	
51518—Interline freight	2,000 00	
50526— " "	3,000 00	

GRAND TRUNK RY. SYSTEM, MONTREAL, QUE.—*Continued.*

50574—Claim No. 8691	$20 00
50608—Claim No. 9183	8 08
50694—Interline freight	2,000 00
50940—Claims	234 70
51002—Proportion rental, Mackenzie & Mann siding, North Bay terminals	62 50
51004—Interline freight	3,000 00
51156—Commission on tickets	4 23
51158—Claim No. 8958	16 50
51226—Interline freight	14,767 98
51228—Commission on tickets	2 77
51230—Proportion charges, C.P.R., scaling cars	4 12
51258—Proportion expense *re* parlor cafe car service	5,301 60
51302—Car service balance	2,623 13
51366—Ticket balance	1,285 23
51568—Interline freight	9,072 49
51525—Claims	221 90
51541—Interline freight	1,500 00
51637— " "	3,000 00
51677— " "	1,500 00
51845—Claims	53 87
51907—Proportion of expense to Pullman Cars	47 92
52053—Interline freight	3,000 00
52055—Claim No. 8368	83
52103—Proportion of revenue from switching, North Bay terminals	24 52
52267—Proportion rent, S. J. Gordon & Co., warehouse site, North Bay terminals	40 02
52395—Car service balance	2,994 40
52455—Ticket balance	3,543 05
52507—Car repairs	98 57
52561—Interline freight balance	9,817 92
51686—Interline freight	1,500 00
51790— " "	3,000 00
51874—Proportion of expense, Pullman cars	181 76
51972—Freight settlement	109 50
51974—Proportion of expense, parlor cafe car service	34 87
52408—Interline freight	3,000 00
52128— " "	3,000 00
52130—Proportion of expense of cars in joint service	141 92
52164—Supplies for private cars	23 95
52266—Proportion of expense, *re* parlor cafe car service	648 32
52570—Car service balance	3,699 58
52636—Ticket balance	139 09
52678—Interline freight balance	11,746 35
52707—Claims	55 30
52725—Interline freight	3,000 00
52779—Claims	83 52
52869—Interline freight	1,500 00
52871—Supplies for demonstration car	14 34
52907—Proportion revenue from switching, North Bay terminals	17 37
52979—Claims	233 98
53045—Interline freight	3,000 00
53101—Proportion of expense *re* parlor cafe car service	383 95
53141—Proportion rent, S. J. Gordon & Co., warehouse site, North Bay terminals	3 33
53181—Car repairs	285 81
53275—Interline freight	3,000 00
53391—Proportion, switching revenue, North Bay terminals	14 38
53427—Proportion expense *re* parlor cafe car service	2,259 26
53633—Equipment for cafe cars	72 12
53703—Car service balance	2,234 59
53755—Ticket balance	1,438 64
53781—Proportion, switching revenue, North Bay terminals	30 15
52726—Claims	29 96

GRAND TRUNK RY. SYSTEM, MONTREAL, QUE.—*Continued.*

52796A—Interline freight	$3,000 00
52884— " "	3,000 00
52924— " "	3,000 00
52960—Claims	25 72
53142—Interline freight	2,000 00
53204—Interline freight balance	15,308 49
53526—Car service balance	2,466 80
53576—Ticket balance	1,859 19
53612—Car repairs	104 92
53616—Interline freight balance	10,572 55
53630—Proportion of loss, operation parlor cafe service	226 06
52825—Interline freight	2,000 00
53841—Claims	77 48
53909— "	35 47
53951—Interline freight balance	1,980 00
54117—Claims	102 35
54157—Haulage of car and supplies for private car	54 34
54531—Proportion, switching revenue, North Bay terminals	26 56
54595—Car service balance	1,841 63
54645—Ticket balance	2,574 81
54685—Car repairs	41 57
54717—Proportion switching revenue, North Bay terminals	45 69
54719—Car repairs	39 06
54765—Interline freight settlement	7,282 52
53728— " "	3,000 00
53742— " "	2,000 00
53778— " "	250 00
53796—Claims	17 91
53830—Proportion expense, joint Pullman service	15 60
53954—Claims	6 18
54034—Proportion expense, joint terminal service	192 53
54546—Car service balance	1,685 05
54586—Ticket balance	805 31
54760—Car repairs	45 80
54815—Claim No. 9638	2 83
54891—Claims	306 20
54971—Proportion revenue, weighing cars, North Bay terminals	1 50
55155—Proportion switching revenue, North Bay terminals	42 68
55175—Line service expenses	54 46
55295—Car repairs	248 15
55317—Car service balance	1,633 03
55349—Ticket balance	971 56
54822—Interline freight	1,000 00
54858—Claims	891 25
54870—Interline freight	600 00
54902— " "	1,800 00
55174—Car repairs	23 55
55230—Interline freight	2,500 00
55280—Proportion switching revenue, North Bay terminals and rent of cinder cars	51 57
55674—Expense *re* Toronto-Winnipeg service	194 87
55676—Proportion of revenue from switching and weighing cars, North Bay terminals	29 09
55606—Car service balance	1,699 63
55716—Interline freight balance	752 46
55683—Claims	4 32
55709—Interline freight	2,800 00
55733— " "	1,800 00
55751—Freight settlement	693 49
55801—Claims	52 55
55875—Interline freight	1,750 00
55989— " "	1,200 00
56039—Proportion loss, operation parlor cafe car service and rent of cinder cars	159 29
56361—Car repairs	33 44

GRAND TRUNK RY. SYSTEM, MONTREAL, QUE.—*Continued.*

56395—Car service balance	$5,257 60	
56435—Interline freight balance	1,701 48	
56437— " " "	4,624 61	
55758—Freight settlement	1,668 79	
55760—Interline freight	3,000 00	
55778— " "	2,500 00	
55784—Freight settlement	665 49	
55800—Interline freight	3,500 00	
55886—Freight settlement	2,477 42	
55982—Interline freight	5,000 00	
55984—Advertising, Toronto-Winnipeg service	146 19	
56416—Car service balance	4,583 21	
56450—Ticket balance	412 36	
56456—Interline freight balance	8,759 38	
56464—Proportion expense *re* parlor cafe car service	675 10	
56498A—Car repairs	140 59	
56498D—Line service charges	1,057 88	
56498G—Proportion loss operation parlor cafe car service, car repairs, etc.	474 53	
56498H—Supplies private cars and proportion revenue from weighing cars, North Bay terminals	152 31	
50505—Claim No. 8450	42 60	
50817—Car repairs	4 29	
51039— "	2 44	
50858— "	1 30	
53209— "	8 75	
52814— "	3 39	
54035— "	5 32	
54555— "	2 43	
53911—Claim No. 9828	8 00	
53936—Car repairs	1 61	
54078—Ticket balance	4 00	
55245—Car repairs	3 11	
55802—Tariff books	22 75	
55882—Car repairs	3 62	
		$262,673 98

GUTTA PERCHA & RUBBER, LTD., TORONTO, ONT.

51028—Mats	$4 70	
51653—Rubber hose	40 59	
52932— "	53 81	
53871— "	158 04	
55224— "	144 16	
55743— "	50 86	
55969— "	75 95	
		$528 11

T. J. GRACEY, ACCOUNTANT, TORONTO, ONT.

51006—Travelling expenses	$6 60	
51991— " "	7 50	
53240— " "	6 45	
54225— " "	6 45	
53712—Salary	150 00	
54783— "	150 00	
54949—Travelling expenses	4 70	
54860—Salary	150 00	
55645— "	150 00	
55748— "	150 00	
		$781 70

GENERAL SUPPLY CO. OF CANADA, LTD., OTTAWA, ONT.

51130—Fittings	$60 16	
52105— "	52 80	
52364— "	78 63	
53041— "	24 06	
53366— "	38 61	
54417— "	25 64	
54132— "	15 36	
55441— "	51 08	
55452— "	349 23	
56157— "	577 28	
56270— "	89 63	
		$1,362 48

W. F. GOOD, ELK LAKE, ONT.

51160—Claim No. 9388	$149 23	
51647—Refund, *re* siding	125 00	
51903— " "	18 08	
51728—Claim No. 9618	1 00	
53777—Ties	152 70	
53777—Switch sets	83 10	
54259— " "	125 90	
54775—Ties	53 60	
		$708 61

GALT, PRESTON & HESPELER RY., GALT, ONT.

50507—Claim No. 7212	$9 95	
54043—Refund freight balance allowed in error	20 58	
		$30 53

GILLIES BROS., LTD., BRAESIDE, ONT.

50509—Claim No. 8396	$2 00	
50584— " 8050	3 23	
52601— " 9643 and 9644 (rebate on siding)	577 24	
52945—Claims (rebate on siding)	581 42	
53138—Repairs to siding	332 09	
53798—Claim No. 10053	60 00	
		$1,555 98

A. B. GORDON & CO., TORONTO, ONT.

50569—Claim No. 7786	$12 63	
		$12 63

A. N. GAGNON, INSPECTOR, NORTH BAY, ONT.

50981—Travelling expenses	$15 50	
		$15 50

GLOBE INDEMNITY CO. OF CANADA, MONTREAL, QUE.

52733—Premium	$24 00	
53949—Premium Policy No. 73568	6,157 42	
		$6,181 42

GIBSON PRIBBLE & CO., RICHMOND, VA.

51159—Pamphlets	$5 40	
		$5 40

N. GATEFF, NORTH BAY, ONT.

50524—Unclaimed wages	$7 79	
		$7 79

WM. GOLDSTEIN & CO., TORONTO, ONT.

51717—Supplies for private cars	$6 00	
55113— " "	13 00	
55757— " "	13 00	
53883— " "	5 75	
56321— " "	6 50	
		$44 25

GRIFFIN & BRINKERHOFF, WINDSOR, ONT.

51490—Brake shoes	$42 00	
52362— " "	126 00	
		$168 00

WM. GOOD, MATHESON, ONT.

55064—Donation *re* alleged injury to team	$40 00	
		$40 00

L. GOUIN, COBALT, ONT.

55080—Claim No. 10151	$5 25	
		$5 25

GENERAL MANIFOLD & PRINTING CO., LTD., FRANKLIN, PA.

56276—Manifold books	$46 24	
		$46 24

GRAND UNION HOTEL, NEW LISKEARD, ONT.

55082—Claim No. 10127	$ 92	
		$ 92

GALVESTON, HARRISBURG & SAN ANTONIO RY., HOUSTON, TEX.

56399—Car service balance	$4 50	
		$4 50

S. G. GRAY, CHECKER, ENGLEHART, ONT.

55943—Travelling expenses	$2 00	
		$2 00

GEO. GRIFFITHS, NORTH BAY, ONT.

56025—Settlement *re* alleged injuries received	$14 01	
55762—Final settlement *re* alleged injuries received	7 27	
		$21 28

H. GREATOREX, WAHTAHBEG, ONT.

52891—Pulpwood	$55 77	
		$55 77

A. GIBSON, MATHESON, ONT.

52891—Pulpwood	$47 86	
		$47 86

GOODYEAR TIRE & RUBBER CO., LTD., TORONTO, ONT.

53073—Rubber bands	$18 62	
		$18 62

GILL & LONG, TORONTO, ONT.

53199—Taxi service	$2 50	
54232— "	50	
54992— "	50	
53046— "	1 00	
		$4 50

GOLDEN-ANDERSON VALVE SPECIALTY CO., PITTSBURG, PA.

53539—Valves	$126 00	
		$126 00

GORDON-DAVIES CO., LTD., HAILEYBURY, ONT.

53913—Claim No. 93929	$4 73	
		$4 73

GEO. GORDON & CO., LTD., CACHE BAY, ONT.

51488—Lumber	$340 05	
56268— "	312 29	
53535— "	100 46	
54413— "	288 00	
54138— "	942 52	
		$1,983 32

GARLOCK PACKING CO., HAMILTON, ONT.

51492—Packing	$28 71	
54409— "	12 70	
55009— "	23 47	
56274— "	18 85	
		$83 73

J. GAUTHIER, COCHRANE, ONT.

51589—Claim No. 9005	$2 68	
		$2 68

THOS. GILMOUR, KENABEEK, ONT.

54259—Ties	$91 80	
54475— "	30 60	
56468— "	104 30	
		$226 70

J. W. GRILLS, CANE, ONT.

52778—Pulpwood	$50 11	
		$50 11

GRILLS COMPANY, NEW LISKEARD, ONT.

52724—Claim No. 9730	$1 86	
54845— " 9156	2 10	
		$3 96

R. GALUCCI, NORTH BAY, ONT.

52902—Settlement *re* alleged injuries	$41 80	
		$41 80

HOMER L. GIBSON, TIMMINS, ONT.

53734—Map	$2 00	
		$2 00

P. Guiseppe, North Bay, Ont.

54805—Unclaimed wages	$2 62	
		$2 62

Grant & Kennedy, New Liskeard, Ont.

54426—Lumber	$559 75	
		$559 75

J. J. Gartshore, Toronto, Ont.

54893—Claim No. 10012	$7 49	
		$7 49

W. A. Griffin, S. of T., North Bay, Ont.

50883—Salary	$260 00	
51267—Travelling expenses	20 35	
51056—Salary	260 00	
52019— "	270 00	
52090— "	270 00	
52353— "	270 00	
53303—Travelling expenses	32 20	
53126—Salary	270 00	
53238—Travelling expenses	12 55	
54227— " "	22 75	
54245—Salary	270 00	
54344— "	270 00	
55017— "	270 00	
55151—Travelling expenses	37 65	
55120—Salary	270 00	
55901— "	270 00	
55941—Travelling expenses	27 05	
55960—Salary	270 00	
		$3,372 55

W. A. Graham, P. A. & S., North Bay, Ont.

50885—Salary	$200 00	
51058— "	200 00	
52021— "	200 00	
52092— "	200 00	
53255— "	200 00	
53128— "	200 00	
54247— "	200 00	
54500—Travelling expenses	22 80	
54346—Salary	200 00	
55021— "	200 00	
55122— "	200 00	
55899— "	200 00	
55962— "	200 00	
		$2,422 80

Mrs. W. E. Gordon, Nahma, Ont.

54863—Claim No. 10140	$10 80	
		$10 80

R. Gray, Master Mechanic's Dept., North Bay, Ont.

50702—Travelling expenses	$3 40	
		$3 40

E. F. Gardiner, Thornloe, Ont.

50653—Ties	$89 59	
		$89 59

GREAT NORTHERN RY., ST. PAUL, MINN.

50819—Car repairs	$1 20	
51041— " "	4 93	
51847—Claim No. 9186	1 00	
52509—Car repairs	16 46	
52506— " "	32 09	
52981—Claim No. 9545	1 00	
53175—Car repairs	17 75	
53100— " "	13 86	
54037— " "	4 01	
54272— " "	20 65	
55249— " "	74 07	
55351—Ticket balance	4 20	
55176—Car repairs	28 39	
56041— " "	9 33	
56397— " "	4 63	
56418—Car service balance	46 63	
		$280 20

GALENA SIGNAL OIL CO., TORONTO, ONT.

51165—Lubricating oils	$160 51	
51494— " "	360 74	
52209— " "	768 57	
52362— " "	231 50	
53537— " "	541 12	
53364— " "	223 96	
54411— " "	381 65	
54140— " "	513 42	
55439— " "	191 95	
55448— " "	724 61	
56155— " "	366 40	
56272— " "	545 39	
		$5,309 82

GEORGIA SOUTHERN & FLORIDA R.R., MACON, GA.

52572—Car service balance	$2 70	
53179—Car repairs	84	
		$3 54

GILMORE & PITTSBURG RY., ST. PAUL, MINN.

56420—Car service balance	$ 45	
		$ 45

GUNNS, LTD., TORONTO, ONT.

50942—Claim No. 9389	$14 18	
		$14 18

E. M. GOODMAN, AGENT, NEW LISKEARD, ONT.

50891—Additional remuneration	$10 00	
51060— " "	10 00	
52025— " "	10 00	
52096— " "	10 00	
53259— " "	10 00	
53132— " "	10 00	
54251— " "	10 00	
54350— " "	10 00	
55025— " "	10 00	
55126— " "	10 00	
55905— " "	10 00	
55966— " "	10 00	
		$120 00

GREAT NORTHWESTERN TELEGRAPH CO. OF CANADA, TORONTO, ONT.

50949—Telegraph messages		$ 26	
51457— " "		2 66	
50762— " "		1 73	
51905— " "		5 88	
51876— " "		6 50	
52168— " "		25	
52873— " "		14 20	
53279— " "		39	
53429— " "		8 30	
53044— " "		9 00	
53190— " "		1 06	
53632— " "		9 37	
54687— " "		3 04	
54618— " "		3 17	
54666— " "		51	
55601— " "		1 63	
54904— " "		1 01	
55282— " "		1 35	
55672— " "		16 76	
55712— " "		26	
56319— " "		1 87	
56363— " "		1 27	
56184— " "		83	
			$91 30

GRAND INTERNATIONAL BROTHERHOOD OF LOCOMOTIVE ENGINEERS, MONTREAL, QUE.

52681—Advertising	$30 00	
		$30 00

GRAND & TOY, LTD., TORONTO, ONT.

50751—Stationery and office supplies	$18 62	
51154— " " "	62 45	
51961— " " "	93 48	
52156— " " "	14 96	
53277— " " "	21 00	
53957— " " "	19 38	
54293— " " "	7 84	
54522— " " "	63 75	
54672— " " "	9 75	
55112— " " "	127 20	
		$438 43

MISS T. GREGORY, GENERAL AGENT'S OFFICE, NORTH BAY, ONT.

50887—Salary	$60 00	
51078— "	60 00	
52023— "	60 00	
52094— "	60 00	
53257— "	60 00	
53130— "	60 00	
54249— "	60 00	
54348— "	60 00	
55023— "	60 00	
55124— "	60 00	
55903— "	60 00	
55964— "	60 00	
		$720 00

B. GREENING WIRE CO., LTD., HAMILTON, ONT.

50989—Steel rope	$7 53	
51161— "	2 00	
50722—Wire	2 56	
51486— "	12 64	

B. Greening Wire Co., Ltd., Hamilton, Ont.—*Continued.*

51651—Steel rope	$19 05	
51814— "	6 47	
53069—Copper wire	16 19	
53158—Wire	4 85	
53368— "	64	
53873— "	173 07	
54136— "	10 00	
54422— "	4 42	
54872—Steel rope	249 02	
55320—Wire	44 07	
55741— "	22 34	
55965— "	10 91	
55898—Steel rope	3 30	
56026—Wire	9 07	
		$598 13

Graham Nail Works, Toronto, Ont.

50991—Wire nails	$72 57	
50724— " "	48 80	
51666— " "	33 96	
51816— " "	28 37	
53071— " "	20 38	
52930— " "	50 72	
54193— " "	44 10	
53884— " "	45 62	
55031— " "	31 28	
54968— " "	33 61	
55871— " "	46 55	
55967— " "	52 28	
50896— " "	18 72	
		$526 96

Gourock Ropework Export Co., Limited, Montreal, Que.

51496—Manilla rope	$107 06	
52207— " "	5 27	
53362— " "	18 98	
55450— " "	6 82	
		$138 13

O. H. Gauthier, Hull, Que.

52709—Claim No. 8184	$37 57	
		$37 57

P. Gauthier, Matheson, Ont.

53843—Claim No. 9392	$18 13	
		$18 13

Gulf, Colorado & Santa Fe Ry., Galveston, Tex.

50821—Car repairs	$1 29	
51043— " "	11 11	
53177— " "	11 07	
53102— " "	18 00	
54039— " "	11 09	
54270— " "	11 72	
55247— " "	2 95	
55884— " "	7 84	
		$75 07

Gulf, Texas & Western Ry., Dallas, Tex.

51327—Car service balance	$4 05	
51304— " " "	2 25	
		$6 30

GERMAN-AMERICAN CAR CO., CHICAGO, ILL.

51329—Car service balance	$ 81	
		$ 81

H. C. GIDLEY, ANTHONY, ONT.

56468—Switch sets	$44 80	
		$44 80

GURNEY FOUNDRY CO., LTD., TORONTO, ONT.

51163—Stoves	$39 42	
51132— "	70 77	
51488—Grates	1 40	
52360— "	3 00	
54415—Stove repair parts	2 50	
54134—Sink	45 00	
		$162 09

OLIVER GARVIN, NORTH BAY, ONT.

50808—Teaming	$2 00	
53431— "	2 00	
		$4 00

J. R. GORDON, TIMMINS, ONT.

56169—Supplies for cars	$17 41	
56150— " "	26 12	
		$43 53

A. P. GERVAIS & CO., NEW LISKEARD, ONT.

51591—Claim No. 9147	$4 78	
52597— " No. 9438	9 00	
		$13 78

F. R. GIBSON, HAILEYBURY, ONT.

51639—Heating system for station	$562 03	
		$562 03

GOWANS, KENT CO., LTD., TORONTO, ONT.

51715—Supplies for cars	$2 55	
54689—Glassware	2 00	
54668—Supplies for cars	3 92	
		$8 47

GEORGIA RY., AUGUSTA, GA.

51783—Car repairs	$1 70	
53938— " "	4 90	
55591— " "	2 99	
52574—Car service balance	4 90	
		$14 49

GLOBE PRINTING CO., TORONTO, ONT.

51957—Advertising	$50 00	
51959—Subscription	5 00	
		$55 00

W. H. GILLARD & CO., HAMILTON, ONT.

52057—Claim No. 8368	$17 79	
		$17 79

GIFFORD-WOOD CO., HUDSON, N.Y.

54407—Tools for ice-house	$12 18	
		$12 18

JAS. H. GAMBLE, MATHESON, ONT.

52557—Ties	$17 60	
52557— "	35 10	
54259— "	30 00	
54775— "	174 57	
		$257 27

A. W. GOLDING, CLUTE, ONT.

52126—Supplies for cars	$14 75	
53103— " "	9 75	
53832— " "	8 70	
54670— " "	11 25	
		$44 45

S. GREENWOOD, NEW LISKEARD, ONT.

52599—Claim No. 9406	$3 93	
52781— " No. 9221	37 08	
55803— " No. 10274	3 57	
		$44 58

HAMILTON & CO., NEW LISKEARD, ONT.

50511—Claims Nos. 9019 and 9030	$1 20	
50635—Claim No. 9022	1 73	
50590—Claims	29 94	
50950— "	6 45	
51527— "	50 28	
51593— "	72 07	
51732— "	6 57	
51849—Claim No. 9160	4 38	
52605— " No. 9254	1 68	
52783—Claims	20 45	
52983— "	56 64	
53958—Claims Nos. 10005-6-7	11 98	
54068—Claim No. 10008	63	
54847— " No. 10004	40	
54897— " No. 10122	2 20	
55685— " No. 10260	1 10	
55805—Claims No. 10261 and No. 10262	24 34	
		$292 04

HOLDEN COMPANY, LTD., MONTREAL, QUE.

51171—Carbons	$10 80	
51500—Head light parts	66 70	
52213—Repair parts	36 77	
53547—Brake shoe pins	69 66	
53376—Repair parts	134 64	
54419—Head light parts	25 61	
54144—Brushes	8 48	
55451—Iron	8 62	
55460—Carbon and castings	43 50	
56161—Repair parts	360 00	
56286— " "	43 39	
		$808 17

HAMILTON BRIDGE WORKS, LTD., HAMILTON, ONT.

51173—Angles, etc.	$137 64	
51502—Bridge plate	37 13	
52217— "	35 55	
51670— "	35 23	
54148— "	271 26	
55449—Car sills	130 00	
55458—Angles and plates	24 38	
56163—Plates	38 43	
56280—Plates and beams	109 04	
		$818 66

HAMILTON STAMP & STENCIL WORKS, LTD., HAMILTON, ONT.

51175—Rubber stamps	$5 29	
51508— "	1 87	
52221— "	5 44	
52374— "	3 92	
53543—Dating stamp	2 66	
53380—Rubber stamps	5 22	
54443— "	3 36	
54142— "	2 77	
54428— "	1 74	
55447— "	8 36	
55456— "	3 69	
56165— "	8 03	
56278— "	2 24	
		$54 59

HOTEL CEDRIC, COCHRANE, ONT.

51006—Board for engineering staff	$6 00	
53834— " "	15 00	
54234— " "	11 50	
55177— " "	23 50	
55991— " "	14 50	
53107— " "	3 00	
53961— " "	3 50	
		$77 00

F. H. HARRIS LUMBER CO., LTD., TORONTO, ONT.

51734—Claim No. 9555	$5 00	
		$5 00

B. HYDE, NORTH COBALT, ONT.

51736—Claim No. 9008	$7 06	
		$7 06

HOYLE LUMBER CO., LTD., MORRISBURG, ONT.

53845—Claim No. 9844	$7 90	
55809— " No. 10279, siding rebate	72 00	
		$79 90

THOMAS HOLMES, MOTIVE POWER DEPT., NORTH BAY, ONT.

51856—Travelling expenses	$16 15	
		$16 15

B. A. HULL, NEW LISKEARD, ONT.

54824—Claim No. 9935	$4 00	
		$4 00

HOGG & LYTLE, NEW LISKEARD, ONT.

55086—Claim No. 10197, siding rebate	$116 00	
		$116 00

H. HARRISON, MOTIVE POWER DEPT., NORTH BAY, ONT.

52200—Travelling expenses	$1 65	
52246— " "	13 40	
		$15 05

HILL-CLARK-FRANCIS, LTD., NEW LISKEARD, ONT.

50571—Claim No. 7300	$26 00	
		$26 00

J. R. HAINER, RELIEVING AGENT, NORTH BAY, ONT.

55842—Expenses	$56 00	
		$56 00

F. G. HOLT, NEW LISKEARD, ONT.

51851—Claim No. 9348	$4 80	
		$4 80

GEO. HAWKINS, MOTIVE POWER DEPT., NORTH BAY, ONT.

52244—Travelling expenses	$4 50	
		$4 50

ALLAN HILLS EDGE TOOL CO., LTD., GALT, ONT.

50727—Tools	$37 00	
51653—Bench axes	7 84	
52934— " "	7 84	
		$52 68

ADAM HALL, LTD., PETERBORO, ONT.

52366—Repair parts	$31 80	
		$31 80

HUDSON BAY MINES, LTD., COBALT, ONT.

51529—Claim No. 8773	$44 32	
55807— " No. 9041	137 36	
		$181 68

S. R. HART & CO., TORONTO, ONT.

53959—Letterheads	$33 85	
54535—Reprinting letterheads	90	
54994—Stationery	13 32	
		$48 07

HUDSON'S BAY CO., NORTH BAY, ONT.

53967—Supplies furnished engineering party	$214 24	
53838— " " " "	112 71	
54908— " " " "	93 29	
		$420 24

ZACK HOIT, NEW LISKEARD, ONT.

53702—Donation *re* horse alleged killed	$25 00	
		$25 00

D. Hill Nursery Co., Inc., Dundee, Ill.

53726—Trees	$25 50	
		$25 50

F. Hall, Cochrane, Ont.

53251—Pulpwood	$52 31	
		$52 31

Milton Hersey Co., Ltd., Montreal, Que.

53840—Analysis of coal	$7 50	
		$7 50

Jas. Hewlett, Toronto, Ont.

53281—Premium	$4 70	
		$4 70

F. W. Hutt, Haileybury, Ont.

53960—Claim No. 9138	$13 89	
54895— " No. 9590	3 47	
		$17 36

R. Hopkins, Porquis Junction, Ont.

53777—Ties	$12 50	
		$12 50

A. L. Herbert, Cobalt, Ont.

53962—Claim No. 9540	$10 88	
		$10 88

R. S. Huntington, Engineering Dept., North Bay, Ont.

54700—Travelling expenses	$3 85	
55067— " "	3 50	
55945— " "	2 35	
		$9 70

H. Hackford, Englehart, Ont.

55117—Plumbing	$2 50	
		$2 50

J. E. Hartney, Cane, Ont.

52778—Pulpwood	$38 98	
53072— "	7 74	
55084—Claim No. 10239	2 00	
		$48 72

H. Howe, Osseo, Ont.

52920—Pulpwood	$10 10	
52857— "	40 42	
		$50 52

Hendry & Reynolds, New Liskeard, Ont.

52962—Claim No. 9820	$26 48	
		$26 48

Hunt-Spiller Mfg. Co., Boston, Mass.

53370—Eccentric straps	$73 31	
		$73 31

JNO. HARRISON SONS & CO., LTD., OWEN SOUND, ONT.

53372—Tie plugs	$75 00	
		$75 00

M. HAITZE, CANE, ONT.

53777—Ties	$84 80	
54259— "	70 40	
		$155 20

HOTEL CECIL, EARLTON, ONT.

53963—Fertilizer	$15 00	
54674— "	8 00	
		$23 00

H. P. HANAN, TORONTO, ONT.

53815—Salary	$60 00	
53698— "	120 00	
		$180 00

F. HARROP, IROQUOIS FALLS, ONT.

55777—Ties	$102 00	
54259— "	23 75	
		$125 75

MRS. A. HOPKINS, PORQUIS JUNCTION, ONT.

52603—Claim No. 8950	$40 40	
		$40 40

T. C. HEALEY, WATAHBEAG, ONT.

52857—Pulpwood	$48 60	
		$48 60

MRS. M. HEASLIP, HEASLIP, ONT.

52909—Lot 5, Con. 3, Evanturel	$163 37	
		$163 37

THOS. HEASLIP, HEASLIP, ONT.

52911—Lot 6, Con. 3, Evanturel	$86 63	
		$86 63

F. HUGH, ENGLEHART, ONT.

52919—Services rendered	$31 40	
		$31 40

E. M. HOBSON, COCHRANE, ONT.

52985—Claim No. 9639	$30 71	
		$30 71

JNO. HUTSON, TROUT MILLS, ONT.

53105—Lighting lamps	$15 00	
		$15 00

HOCKING VALLEY RLD., COLUMBUS, OHIO.

50680—Car repairs	$ 46	
51306—Car service balance	3 15	
51785—Car repairs	1 85	
52397—Car service balance	1 35	
52576— " " "	3 15	
53705— " " "	6 75	
54548— " " "	3 60	
55992—Car repairs	26	
		$20 57

J. HETHERINGTON, HANBURY, ONT.

56468—Fence posts	$65 25	
		$65 25

R. S. HICKS, TORONTO, ONT.

51819—Refund account, car misrouted	$30 00	
51887—Claim No. 9627	116 31	
52730— " No. 9627 (balance)	43 11	
		$189 42

HEATON'S AGENCY, TORONTO, ONT.

51234—Annual	$1 00	
		$1 00

GEO. H. HEES, SON & CO., LTD., TORONTO, ONT.

51510—Blinds	$2 56	
52219— "	1 86	
52370— "	17 42	
53549—Webbing	16 20	
55454—Shades	5 54	
56288— "	6 43	
		$50 01

R. W. HUNT & CO., LTD., MONTREAL, QUE.

54295—Inspecting rails	$150 15	
55480— " tie plates	8 24	
56284— " rail joints	34 40	
		$192 79

G. A. HENDERSON, COCHRANE, ONT.

52107—Plumbing	$32 87	
51730—Claim No. 9001	1 75	
		$34 62

F. H. HOPKINS CO., MONTREAL, QUE.

52218—Cables for steam shovel	$42 50	
52368—Repair parts	264 53	
55445—Castings	17 50	
		$324 53

J. A. HUMPHREY & SON, TORONTO, ONT.

51964—Services rendered	$195 00	
		$195 00

B. Holbrook, Engineering Dept., North Bay, Ont.

50923—Travelling expenses	$2 05	
51854— " "	10 60	
52348— " "	7 50	
53355— " "	19 75	
54229— " "	5 20	
54724— " "	4 10	
55254— " "	4 25	
56098— " "	5 55	
		$59 00

Harris Tie & Timber Co., New Liskeard, Ont.

50944—Claim No. 9407	$10 47	
52711— " No. 9015	18 24	
		$28 71

G. D. Hamilton, South Porcupine, Ont.

50946—Claim No. 9134	$6 59	
54119— " No. 9822	8 25	
53956— " No. 9962	4 62	
54899— " No. 10146	3 00	
		$22 46

Otto Hoeltze, M. P. Dept., North Bay, Ont.

51269—Travelling expenses	$3 50	
		$3 50

Hotel Matheson, Matheson, Ont.

54299—Board and lodging (engineering staff)	$15 00	
		$15 00

A. Hopkins, Iroquois Falls, Ont.

54277—Clearing station ground, Porquis Junction	$18 00	
		$18 00

Harris Abattoir Co., Ltd., Toronto, Ont.

50504—Claim No. 8126	$18 55	
50612— " No. 9271	12 50	
51668— " No. 9485	140 00	
53823— " No. 9710	25 23	
		$196 28

Hotel Goldfield, Timmins, Ont.

52915—Board supplied engineering party	$28 00	
53836— " " " "	2 00	
53965— " " " "	11 00	
		$41 00

Hollinger Gold Mines, Porcupine, Ont.

50614—Claim No. 7442	$11 30	
50506—Smithing coal	90 57	
54844—Claim No. 9655	8 00	
		$109 87

Ham & Grant, Englehart, Ont.

51878—Supplies for auxiliary car	$4 20	
52964—Claim No. 9839	6 42	
54856— " No. 10046	3 85	
54906—Supplies for auxiliary car	13 15	
		$27 62

O. M. Hennessey, Haileybury, Ont.

50948—Claim No. 7945	$12 50	
		$12 50

The Haileyburian, Haileybury, Ont.

51008—Advertising	$9 60	
51531—Claim No. 8922	11 60	
52050—Advertising	3 50	
54622— "	10 50	
55179— "	4 00	
		$39 20

The Herald Printing Co., New Liskeard, Ont.

51010—Advertising	$13 80	
52913— "	5 28	
		$19 08

Albert Hayes, Kenabeek, Ont.

51232—Donation account ties destroyed by fire	$90 00	
54775—Ties	91 25	
56468— "	30 50	
		$211 75

Hydro-Electric Power Commission, Toronto, Ont.

51167—Electric Lamps	$99 99	
51498— " "	216 92	
52211— " "	176 77	
52372— " "	17 43	
53378— " "	53 82	
54421— " "	33 00	
54146— " "	57 78	
55443— " "	36 83	
56282— " "	140 00	
		$832 54

S. Henerofsky, Englehart, Ont.

50611—Refund of siding deposit	$290 00	
51162—Work performed on Siding M.P. 145.1	55 00	
		$345 00

Hayes Track Appliance Co., Richmond, Ind.

51169—Derails	$150 00	
53545— "	150 00	
53374— "	11 50	
56290— "	39 00	
		$350 50

F. Heasman, New Liskeard, Ont.

50586—Claim No. 8840	$ 67	
		$ 67

A. Holmes, Hanbury, Ont.

50588—Claim No. 8818	$40 00	
		$40 00

Town of Haileybury, Haileybury, Ont.

51681—Water supplied	$17 00	
53432— " "	17 00	
53655— " "	24	
54620— " "	17 00	
56232— " "	17 00	
		$68 24

INDUSTRIAL BANNER, TORONTO, ONT.

50467—Advertising	**$10 00**	
53885—Advertising	15 00	
		$25 00

IMPERIAL OIL CO., LIMITED, SARNIA, ONT.

50637—Claim No. 8463	$15 02	
51177—Oils	352 19	
51331—Car service balance	1 60	
51308—Car service balance	3 15	
51504—Oils	404 76	
52227— "	536 63	
52399—Car service balance	1 54	
52376—Oils	462 57	
52578—Car service balance	3 15	
52787—Claims	10 86	
53551—Oils	255 49	
53709—Car service balance	7 66	
53384—Oils	172 79	
53530— "	4 69	
54423— "	100 88	
54599— "	3 86	
54150— "	9 04	
54430—Empty tank cars	1,000 00	
54434—Oil and wax	126 92	
54550—Car service balance	9 26	
55319— " " "	2 32	
55457—Oil	194 72	
55088—Claim No. 10249	138 00	
55462—Oils	391 30	
55608—Car service balance	18 76	
56167—Oils	228 16	
56401—Car service balance	27 88	
56292—Headlight oil	134 03	
56422—Car service balance	**25 57**	
		$4,642 80

S. IRETON, THORNLOE, ONT.

52557—Ties	$46 17	
		$46 17

ILLINOIS CENTRAL R.R., CHICAGO, ILL.

50823—Car repairs	$42 89	
50862— "	26 58	
52513— "	21 08	
51922— "	16 40	
52508— "	47 74	
52836— "	24 54	
54043— "	36 63	
54557— "	42 54	
55178— "	8 15	
55208— "	73 06	
56498— "	248 98	
		$588 59

INTERCOLONIAL RAILWAY OF CANADA, MONCTON, N.B.

51381—Ticket balance	$142 40	
51368— " "	154 12	
51853—Claim No. 8465	8 40	
52457—Ticket balance	194 10	
52636— " "	66 87	
53183—Car repairs	42	

INTERCOLONIAL RAILWAY OF CANADA, MONCTON, N.B.—*Continued.*

53707—Car service balance	$4 50	
53757—Ticket balance	75 10	
53528—Car service balance	19 80	
52578—Ticket balance	161 71	
54597—Car service balance	18 45	
54647— " " "	66 43	
54588—Ticket balance	47 20	
55251—Car repairs	44 39	
55353—Ticket balance	30 08	
55644— " "	210 33	
		$1,244 30

INTERNATIONAL RAILWAY PUBLISHING CO., MONTREAL, QUE.

51096—Advertising in Official Guide	$17 50	
53283— " "	29 00	
54474— " "	29 00	
55806— " "	29 00	
		$104 50

INTERNATIONAL & GREAT NORTHERN RY., PALESTINE, TEX.

51370—Ticket balance	$4 40	
53185—Car repairs	9 42	
55182— " "	46	
		$14 28

INDIANA HARBOR BELT R.R. CO., NEW YORK, N.Y.

52511—Car repairs	$1 11	
54041— "	1 74	
54762— "	84	
55253— "	8 26	
		$11 95

IDAHO, WASHINGTON & NORTHERN RY., SPIRIT LAKE, IDA.

53532—Car service balance	$3 15	
54601— " " "	45	
		$3 60

IRWIN AUGER BIT CO., LIMITED, WILMINGTON, N.C.

51512—Bits	$4 22	
		$4 22

I.O.O.F. DISTRICT, No. 52, ENGLEHART, ONT.

51551—Refund on excursion guarantee	$23 10	
56186— " " "	16 15	
		$39 25

IMPERIAL BANK OF CANADA, COBALT, ONT.

51719—Repairs to drains	$9 35	
		$9 35

JOHN INGLIS CO., LIMITED, TORONTO, ONT.

52223—Shaft hanger	$5 00	
		$5 00

INTERNATIONAL SEAL & LOCK CO., HASTINGS, MICH.

52225—Car seals	$58 75	
53553— "	70 50	
54432— "	58 75	
		$188 00

IMPERIAL WASTE & METAL CO., MONTREAL, QUE.

52229—Wipers	$38 25	
		$38 25

IRISH & MAULSON, LIMITED, TORONTO, ONT.

50901—Extra premiums	$87 84	
51086—Premium for general schedule, 1915	12,178 40	
52109—Extra premiums, tie stock	400 01	
52172—Extra premiums on schedule, 1915	6 79	
53192—Premium on ties, reserve stock at Timmins	400 00	
54691—Extra premium on schedule, 1915	15 50	
55119— " " "	93 35	
55808— " " "	37 30	
		$13,219 19

INVERNESS RAILWAY & COAL CO., INVERNESS, N.S.

52580—Car service balance	$1 35	
		$1 35

INTERNATIONAL MALLEABLE IRON CO., LIMITED, GUELPH, ONT.

53382—Castings	$24 39	
54425— "	16 70	
54152— "	12 33	
55455— "	3 61	
56169—Express charges on patterns	55	
56294—Castings and washers	24 73	
		$82 31

IRON TRADE REVIEW, CLEVELAND, OHIO.

55459—Subscription	$6 00	
		$6 00

INDUSTRIAL WORKS, BAY CITY, MICH.

55453—Grate bars	$6 60	
		$6 60

INTERURBAN RAILWAY CO., DES MOINES, IA.

55180—Car repairs	$1 12	
56043— "	2 56	
		$3 68

JAMIESON MEAT CO., LTD., COBALT, ONT.

50513—Claim No. 8208	$20 44
50575— " 8111	23 79
51179—Meats	28 63
51399— "	304 21
51401— "	105 47
51403— "	199 08
51516— "	1 50
51518— "	253 91
51520— "	312 19
51533—Claim No. 8413	84 06
51595— " 9128	2 73
52269—Meats	8 48
52271— "	11 35
51884— "	3 52
52424— "	5 91
52789—Claim No. 9038	23
52607—Claims	33 72
52987—Claim No. 8903	80 00

JAMIESON MEAT CO., LIMITED, COBALT, ONT.—*Continued.*

53555—Meats	$1 20	
53847—Claim No. 9614	14 20	
54429—Meats	188 51	
53802—Claim No. 9999	32 35	
54154—Meats	111 63	
54442— "	127 99	
55465— "	245 09	
55092—Claim No. 9653	30 00	
55464—Meats	408 85	
55815—Claim No. 9800	28 56	
56175—Meats	248 64	
56298— "	384 98	
		$3,301 22

C. JENKINSON, CANE. ONT.

53072—Pulpwood	$36 59	
		$36 59

JAMIESON COAL & COKE CO., PITTSBURG, PA.

53534—Car service balance	$ 77	
54603— " " "	77	
		$1 54

P. H. JORY, HAILEYBURY, ONT.

50598—Claim No. 9085	$ 71	
51855— " 9335	78	
55090— " 10114	66	
		$2 15

JONES & MOORE ELECTRIC CO., LIMITED, TORONTO, ONT.

55121—Dry cells	$2 10	
		$2 10

D. F. JONES MANUFACTURING CO., GANANOQUE, ONT.

50729—Shovels	$34 67	
51183— "	20 37	
50726— "	39 69	
51657— "	32 19	
53160— "	33 09	
		$160 01

JACKSON PRESS, KINGSTON, ONT.

51181—Printed forms	$86 60	
51524— "	205 64	
52273— "	247 47	
52380— "	328 95	
53557— "	328 58	
53380— "	236 85	
54427— "	288 80	
54156—Binders, etc.	95 40	
54444—Printed forms	4 38	
55463— "	95 80	
55466— "	83 73	
56173— "	107 02	
56292— "	33 50	
		$2,142 72

JAMES BAY LUMBER CO., GOWGANDA, ONT.

53800—Claim No. 9917	$2 77	
		$2 77

H. N. Joy, South Porcupine, Ont.

54901—Claim No. 10042	$1 12	
		$1 12

D. Johnson, Matheson, Ont.

55813—Claim No. 10237	$8 03	
		$8 03

Johnson & Johnson, New Brunswick, N.J.

51818—First aid cabinets	$57 00	
		57 00

H. Jack, Heaslip, Ont.

52557—Telephone poles	$4 00	
		$4 00

Eli Joseph, Cochrane, Ont.

51738—Claim No. 9505	$2 08	
		$2 08

William Junor, Toronto, Ont.

52378—Dishes	$62 10	
56173— "	10 13	
		$72 23

A. Johnston, Cane, Ont.

52857—Pulpwood	$46 40	
52891— "	11 60	
		$58 00

A. Jeffries, Watahbeag, Ont.

52857—Pulpwood	$46 68	
		$46 68

S. A. Jones, Cochrane, Ont.

52111—Services rendered	$1 50	
52122— " "	3 00	
		$4 50

H. Johnson, Monteith, Ont.

53777—Ties	$18 31	
54775— "	11 73	
		$30 04

C. H. Jordan, Kenabeek, Ont.

53777—Ties	25 60	
		$25 60

Charles Johnson, McCool P.O., Ont.

52920—Pulpwood	$46 47	
53072— "	11 61	
		$58 08

J. G. G. Kerry, Toronto, Ont.

50441—Salary as Consulting Engineer	$83 33	
50480— " " "	83 33	
51507— " " "	83 33	
51656— " " "	83 33	
52693— " " "	83 33	
52754— " " "	83 33	
53795— " " "	83 33	
53714— " " "	83 33	
54793— " " "	83 33	
54812— " " "	83 33	
55659— " " "	83 33	
55730— " " "	83 33	
		$999 96

Kerry & Chace, Limited, Toronto, Ont.

50671—*Re* electrification of Road	$253 82	
51080—Services rendered	584 75	
53842— "	167 21	
		$1,005 78

H. Kennard, Cobalt, Ont.

50577—Claim No. 8369	$5 00	
		$5 00

George King, Earlton, Ont.

50721—Drilling well, New Liskeard	$903 36	
51911— " Heaslip	1,098 42	
53390—Well casing	49 35	
53969—Drilling well	406 50	
		$2,457 63

King George Hotel, Elk Lake, Ont.

50766—Board supplied to Engineering Dept.	$6 00	
51880— " " "	11 50	
		$17 50

W. J. Kelly, Sup't of T. & T., North Bay, Ont.

50983—Travelling expenses	$26 05	
51008— "	24 45	
51993— "	11 25	
53359— "	9 85	
54231— "	12 60	
54476— "	30 20	
55153— "	14 25	
55300— "	11 80	
56297— "	9 10	
56100— "	20 30	
		$169 85

Kingsville Reporter, Kingsville, Ont.

50899—Advertising	$1 50	
		$1 50

REBECCA KENNEDY, NORTH BAY, ONT.

54659—Laundry	$15 81	
54598— "	16 71	
54696— "	1 50	
55045— "	20 37	
55424— "	20 49	
56075— "	19 80	
56162— "	20 52	
51463— "	15 00	
51144— "	14 37	
52275— "	12 75	
52220— "	12 54	
53285— "	14 56	
53114— "	14 01	
		$198 43

KING GEORGE HOTEL, COCHRANE, ONT.

50594—Claim No. 8898	$10 15	
		$10 15

KANSAS CITY SOUTHERN RAILWAY, KANSAS CITY, MO.

51045—Car repairs	$5 60	
51310—Car service balance	6 75	
54045—Car repairs	11 62	
54274— "	10 43	
55186— "	11 24	
55994— "	4 53	
		$50 17

KENTUCKY & INDIANA TERMINAL RY., LOUISVILLE, KY.

53187—Car repairs	$1 81	
55255— "	2 06	
55184— "	1 23	
		$5 10

KEUFFEL & ESSER CO. OF NEW YORK, MONTREAL, QUE.

51185—Water color paints	$2 46	
52382—Pencils and water color paint	2 04	
54036—Transit	4 34	
56177—Water color paints	1 56	
56300—Level box and tripod	23 75	
		$34 15

D. KERRIGAN, LANDSCAPE GARDENER, ENGLEHART, ONT.

51271—Travelling expenses	$4 70	
51192— "	9 87	
53357— "	6 00	
52262— "	2 35	
54759— "	14 20	
55069— "	37 12	
55252— "	2 75	
55947— "	11 80	
		$88 79

J. KRUGCEVRIC, CONNAUGHT, ONT.

52690—Ties	$3 95	
52690—Telegraph poles	27 50	
54259— "	10 45	
		$41 90

KNECHTEL FURNITURE CO., LIMITED, HANOVER, ONT.

50540—Claim No. 7518	$17 22	
51526—Desk	31 75	
51659—Arm chair tilter	6 13	
52134—Chair	5 15	
53561—Desk	17 75	
		$78 00

F. KESTELA, COBALT, ONT.

50600—Claim No. 8714	$34 64	
		$34 64

KOLONIST & VOLKSBLATT, BERLIN, ONT.

50768—Advertising	$4 20	
		$4 20

KENNEDY BROS. UTICA, N.Y.

51522—Inserts	$2 00	
52231—Memo books	2 00	
52384— "	1 00	
53559— "	11 00	
56179— "	3 00	
		$19 00

KERR BROTHERS, TORONTO, ONT.

51524—Files	$4 18	
		$4 18

C. D. KERR, NORTH BAY, ONT.

51641—Settlement *re* alleged injuries	$50 00	
		$50 00

D. KORMAN, ENGLEHART, ONT.

51886—Supplies furnished auxiliary car	$39 65	
		$39 65

D. KERTZER, COCHRANE, ONT.

54849—Claim No. 9823	$14 50	
		$14 50

KING EDWARD HOTEL, ENGLEHART, ONT.

52170—Board supplied Engineering Dept.	$8 00	
53393— " " "	3 50	
53048— " " "	7 50	
55603— " " "	3 30	
55811—Claims	5 87	
56126—Claim No. 10398	4 89	
51461—Board supplied Engineering Dept.	14 55	
50592—Claim No. 8920	2 86	
50764—Board supplied Engineering Dept.	10 45	
51965— " " "	2 30	
51882— " " "	3 00	
52917— " " "	3 00	
56128—Claim No. 10397	58	
		$69 80

R. D. KIRK, MONTEITH, ONT.

52690—Ties	$78 64	
52690— "	29 97	
		$108 61

J. Kirkbride, Claybelt, Ont.

52857—Pulpwood	$61 00	
		$61 00

W. Kerstein, Matheson, Ont.

52891—Pulpwood	$46 57	
53251— "	11 72	
		$58 29

Karen Dry Goods Co., Cochrane, Ont.

52989—Claim No. 9504	$6 50	
		$6 50

Kalamazoo Railway Supply Co., Kalamazoo, Mich.

53388—Cattle guards	$36 69	
		$36 69

Kerr Engine Co., Limited, Walkerville, Ont.

55719—Valves	$33 52	
56181—Hydrants	70 00	
		$103 52

Kertzer & Hochman, Iroquois Falls, Ont.

55761—Excavating and grading for Iroquois Falls station	$956 00	
56130—Claim No. 10210	88	
		$956 88

Geo. F. Krick, Uno Park, Ont.

55817—Claim No. 9798	$3 13	
		$3 13

Krug Bros. Co., Limited, Chesley, Ont.

55924—Claim No. 9478	$8 45	
		$8 45

Mrs. A. King, Latchford, Ont.

56088—Board supplied to Engineering party	$20 57	
		$20 57

G. W. Lee, Commissioner and General Agent, North Bay, Ont.

50443—Salary as General Agent	$190 00
50701—Travelling expenses	7 00
50470—Honorarium	250 00
50452—Salary as General Agent	190 00
50824—Travelling expenses	18 00
51509—Salary as General Agent	190 00
51751—Travelling expenses	26 75
51658—Salary as General Agent	190 00
52056—Travelling expenses	15 00
52695—Salary as General Agent	190 00
52955—Honorarium	250 00
53109—Travelling expenses	38 00
52756—Salary as General Agent	190 00
52790—Salary increase, April, 1914, to April, 1915	229 16
53116—Travelling expenses	15 00
53797—Salary as General Agent	208 33
54143—Travelling expenses	37 10

G. W. Lee, Commissioner and General Agent, North Bay, Ont.—*Continued.*

53688—Honorarium	$250 00	
53716—Salary as General Agent	208 33	
54010—Travelling expenses	17 00	
54795—Salary as General Agent	208 33	
54947—Travelling expenses	19 60	
54804—Salary as General Agent	208 33	
54910—Travelling expenses	35 80	
55647—Honorarium	250 00	
55661—Salary as General Agent	208 33	
55883—Travelling expenses	24 00	
55732—Salary as General Agent	208 33	
55810—Travelling expenses	25 50	
		$3,897 89

M. Leborivitz, Cobalt, Ont.

50515—Claim No. 8713	$2 60	
		$2 60

Labor News Publishing Co., Hamilton, Ont.

50541—Advertising	$10 00	
54541— "	15 00	
		$25 00

Lehigh Valley Railroad, Philadelphia, Pa.

50993—Commercial allowance on Immigrant tickets	$7 39	
51333—Car service balance	90	
51383—Ticket balance	18 00	
51465—Commercial allowance on Immigrant tickets	2 97	
50864—Car repairs	26 86	
51236—Commercial allowance on Immigrant tickets	26	
51312—Car service balance	46 80	
51374—Ticket balance	27 04	
51857—Claim No. 9087	1 89	
52401—Car service balance	79 65	
52459—Ticket balance	56 54	
52515—Car repairs	97	
51888—Commercial allowance on Immigrant tickets	1 04	
51924—Car repairs	1 08	
52582—Car service balance	92 70	
52640—Ticket balance	56 17	
52609—Claim No. 7282	19 49	
52791— " No. 9432	4 14	
53189—Car repairs	14 00	
53711—Car service balance	80 55	
53759—Ticket balance	35 20	
52840—Car repairs	79	
53536—Car service balance	33 75	
54159—Commercial allowance on Immigrant tickets	52	
54605—Car service balance	19 35	
54276—Car repairs	32 51	
54390—Commercial allowance on Immigrant tickets	47	
54590—Ticket balance	61	
54903—Claims	10 60	
55257—Car repairs	8 60	
55321—Car service balance	4 95	
55188—Car repairs	5 09	
55610—Car service balance	90 40	
56045—Car repairs	40	
56403—Car service balance	64 35	
55996—Car repairs	1 05	
56424—Car service balance	23 40	
		$870 48

LIBRARY BUREAU OF CANADA, LIMITED, TORONTO, ONT.

50535—Transfer cases	$6 75	
51683—Folders	7 50	
52176—Transfer cases	9 75	
		$24 00

LABOR DIRECTORY OF TORONTO, TORONTO, ONT. ..

50523—Advertising	$10 00	
		$10 00

LAROSE MINES, LIMITED, COBALT, ONT.

50579—Claim No. 8234	$2 52	
55928— " 8568	187 94	
		$190 46

E. LAFLAMME, NORTH COBALT, ONT.

50581—Claim No. 8917 and 8469	$70 51	
53806— " No. 10009	1 50	
55819— " No. 9918	6 62	
		78 63

LONDON ADVERTISER, LONDON, ONT.

50673—Advertising	$8 40	
		$8 40

LEADER PUBLISHING CO., LIMITED, MORRISBURG, ONT.

50903—Advertising	$ 75	
		$ 75

LEADER PRINTING CO., TORONTO, ONT.

50728—Forms	$26 75	
54261— "	30 07	
		$56 82

F. W. LEE (C. P. R. PASSENGER RATE BUREAU), MONTREAL, QUE.

50951—Tariffs	$10 00	
		$10 00

LAKE SIMCOE ICE SUPPLY CO., LIMITED, TORONTO, ONT.

50955—Ice supply	$2 25	
50874— "	2 25	
51967— "	2 25	
52054— "	2 25	
53287— "	2 25	
53971— "	2 25	
54297— "	2 25	
54512— "	2 25	
54996— "	2 25	
55346— "	2 25	
56325— "	2 25	
56188— "	2 25	
		$27 00

LADY MINTO HOSPITAL, NEW LISKEARD, ONT.

50452—Donation	$100 00	
		$100 00

W. H. Lewis, Local Master of Titles, Haileybury, Ont.

50528—Title search	$3 04	
51166— "	3 04	
52921— "	8 90	
53395— "	3 02	
54678—Certifying plans	2 53	
56190—Title search	9 00	
56466— "	2 33	
		$31 86

Lowe-Martin Co., Limited, Ottawa, Ont.

52174—Cards	$ 72	
53844—Stationery	3 90	
54998—Cards	90	
53973—Manilla files	3 00	
		$8 52

Sam Loisel, Lineman, South Porcupine, Ont.

50985—Travelling expenses	$5 85	
51110— "	5 40	
52113— "	3 00	
52250— "	4 00	
53361— "	4 60	
53244— "	7 30	
54543— "	9 80	
54478— "	8 85	
55121— "	6 30	
55302— "	3 75	
56299— "	17 65	
56102— "	13 75	
		$90 25

Louisiana Railway & Navigation Co., Shreveport, La.

51049—Car repairs	$5 50	
51134— "	13 49	
51787— "	20 71	
55261— "	5 00	
56049— "	17 23	
		$61 93

Louisville & Nashville R.R., Louisville, Ky.

51051—Car repairs	$4 88	
50866— "	3 09	
51038— "	30 79	
51928— "	3 53	
53191— "	1 63	
52838— "	4 10	
54278— "	37 27	
54764— "	4 49	
55010— "	3 93	
55190— "	73	
56000— "	1 28	
		$95 72

Louisiana & Western Ry., New Orleans, La.

50825—Car repairs	$ 48	
51926— "	1 12	
		$1 60

Lake Superior Paper Co., Limited, Sault Ste. Marie, Ont.

50952—Claim No. 9149	$4 79	
		$4 79

LIGHTNING POLISH CO., PETROLIA, ONT.

51534—Polish	$14 40	
52235— "	9 60	
54450— "	12 96	
		$36 96

O. LARIVIERE, CAR DEPT., NORTH BAY, ONT.

51545—Travelling expenses	$10 25	
		$10 25

D. LAPRAIRIE, TIMMINS, ONT.

51597—Claim No. 9098	$3 80	
		$3 80

G. R. LOCKER CO., MONTREAL, QUE.

51233—Gauge glasses	$4 08	
54467— "	5 08	
56189— "	5 10	
54431— "	50	
53394— "	8 16	
		$22 92

LOCOMOTIVE SUPERHEATER CO., NEW YORK, N.Y.

52241—Pyrometer	$115 00	
53565—Flue cleaners	78 20	
53396—Fittings	114 82	
		$308 02

MRS. A. LALONDE, NORTH BAY, ONT.

52243—Bacon	$3 40	
55471—Groceries	14 58	
		$17 98

E. LEONARD & SONS, LIMITED, LONDON, ONT.

52136—Smoke stack	$342 77	
		$342 77

FRED LAKE, IROQUOIS FALLS, ONT.

53849—Claim No. 9877	$15 00	
		$15 00

F. X. LAFRAMBOISE, NORTH COBALT, ONT.

52557—Ties	$179 81	
54775— "	100 00	
		$279 81

LONDON GUARANTEE & ACCIDENT CO., TORONTO, ONT.

51890—Premium collective bond	$77 19	
		$77 19

R. L. LAMB, CHIEF DESPATCHER, NORTH BAY, ONT.

52102—Travelling expenses	$13 00	
53246— " "	18 00	
54912— " "	15 90	
		$47 70

F. Labelle, Watahbeag, Ont.

52690—Ties	$51 87	
		$51 87

Harry Labelle, Watahbeag, Ont.

52857—Pulpwood	$47 92	
		$47 92

W. R. Lowery, Cobalt, Ont.

52611—Claim No. 9464	$6 80	
52991— " 9452	24 80	
53804— " 9980	70	
55094— " 10126	52	
		$32 82

Felix Lacroix, Timmins, Ont.

52793—Claim No. 8582	$3 24	
		$3 24

Corporation of Town of Latchford, Latchford, Ont.

53680—Donation	$200 00	
		$200 00

C. Lamoth, Cochrane, Ont.

52857—Pulpwood	$49 39	
		$49 39

L. Lafleur, Cochrane, Ont.

52882—Pulpwood	$59 17	
		$59 17

Lunkenheimer Co. of Cincinnati, Cincinnati, Ohio.

54448—Safety valve	$2 97	
56187—Grease cups	99	
		$3 96

F. Ludford, Iroquois Falls, Ont.

53072—Pulpwood	$57 10	
		$57 10

Louisiana & Pacific Railway, Kansas City, Mo.

55259—Car repairs	54	
		54

Walter Little, Swastika, Ont.

53634—Hire of horse and rig	$5 00	
		$5 00

J. E. Leblanc, North Bay, Ont.

55469—Meat	$3 05	
		$3 05

D. Legault, Charlton, Ont.

50538—Claim No. 8570	$7 10	
		$7 10

R. LAIDLAW LUMBER CO., LIMITED. TORONTO, ONT.

53392—Lumber	$285 34	
56183—Car sills	663 59	
56302—Lumber	12 81	
		$961 74

LONDON ROLLING MILL CO., LIMITED, LONDON, ONT.

51187—Iron	$112 99	
51530— "	158 34	
52386— "	153 55	
53567— "	6 97	
		$431 85

LAING & MACKIE, NORTH BAY, ONT.

51189—Matresses	$15 00	
51528—Table	3 00	
53579—Mattresses	41 40	
54446—Table	4 25	
55468—Mattresses	10 00	
		$73 65

LAMBTON CREAMERY CO., PETROLIA, ONT.

51191—Butter	$100 80	
54433— "	58 05	
54158— "	113 85	
54452— "	24 30	
55473— "	50 40	
55472— "	88 20	
56185— "	76 05	
56304— "	55 35	
		$567 00

LINDSAY & MCCLUSKEY, NORTH BAY, ONT.

51193—Lime	$10 50	
52237—Ice	1,734 60	
53563—Lime	18 75	
54435— "	18 75	
55470— "	28 15	
56191— "	9 40	
		$1,820 15

LONDON CONCRETE MACHINERY CO., LIMITED, LONDON, ONT.

55475—Pipe forms, etc.	$410 35	
		$410 35

GEO. LAKE, SOUTH PORCUPINE, ONT.

55687—Claim No. 10112	$3 90	
		$3 90

DEXTER P. LILLIE CO., INDIAN ORCHARD, MASS.

51195—Waste	$84 74	
51532— "	169 29	
52239— "	112 73	
		$366 76

JOSEPH LANDRIE, COCHRANE, ONT.

50616—Claim No. 7820	$20 75	
		$20 75

A. L. Lye, M. P. Dept., North Bay, Ont.

52202—Travelling expenses	$1 00	
54223— " "	50	
		$1 50

F. W. Love, Thornloe, Ont.

54259—Telegraph poles	$3 00	
56164—Lumber	27 53	
56468—Switch sets	316 20	
56166—Lumber	215 00	
		$561 73

S. Laporte, North Cobalt, Ont.

52178—Ice	$444 22	
52186— "	50 00	
52182— "	42 75	
		$536 97

Jas. Louden, North Bay, Ont.

55893—Award of W. C. B., *re* injuries	$17 33	
		$17 33

Lehigh & Hudson River Railway Co., Warwick, N.Y.

56047—Car repairs	$0 35	
		$0 35

Louisiana & Arkansas Ry., Stamps, Ark.

50827—Car repairs	$1 83	
51314—Car service balance	4 50	
52519—Car repairs	2 16	
56002— " "	54	
		$9 03

Lake Shore & Michigan Southern R.R., New York, N.Y.

50829—Car repairs	$30 62	
51036— " "	33 65	
51372—Ticket balance	10 47	
52517—Car repairs	23 17	
52510 " "	25 78	
		$123 69

Lake Erie & Western R.R., Indianapolis, Ind.

50831—Car repairs	$0 71	
51047— "	3 01	
52512— "	19 81	
54047— "	3 70	
55998— "	2 02	
		$29 25

P. J. Lafleur, Earlton, Ont.

53777—Ties	$90 00	
		$90 00

Mobile & Ohio Railroad, Mobile, Ala.

50835—Car repairs	$10 78	
50882— "	6 70	
51789— "	88	
52523— "	2 71	

MOBILE & OHIO RAILROAD, MOBILE, ALA.—*Continued.*

53213—Car repairs	$2 07	
52850— "	11 75	
54055— "	8 26	
54286— "	5 56	
54766— "	1 13	
55267— "	5 83	
55210— "	1 93	
		$57 60

MISSOURI PACIFIC RY., ST. LOUIS, MO.

50837—Car repairs	$13 99	
51061— "	20 38	
51042— "	32 63	
52061— "	15 20	
52516— "	7 77	
52848— "	4 16	
54049— "	26 51	
55593— "	55 18	
55012— "	9 73	
		$185 55

MICHIGAN CENTRAL R.R., DETROIT, MICH.

51057—Car repairs	$10 23	
51040— "	13 18	
52463—Ticket balance	15	
51934—Car repairs	53 45	
52995—Claim No. 8355	2 25	
53195—Car repairs	15 60	
52846— "	25 19	
53917—Claim No. 9129	1 16	
54059—Car repairs	27 06	
54280— "	10 45	
55595— "	7 48	
55022— "	75 26	
55693—Claim No. 10078	3 07	
56051—Car repairs	6 60	
56004— "	4 61	
		$255 74

MINERAL SPRINGS, LTD., TORONTO, ONT.

50753—Water supplied office	$2 75	
50804— " "	3 25	
51973— " "	4 25	
52268— " "	3 75	
53289— " "	4 75	
53975— " "	4 25	
54201— " "	3 00	
54486— " "	2 50	
55000— " "	4 50	
56192— " "	5 00	
		$38 00

MIGHT DIRECTORIES, LTD., TORONTO, ONT.

50905—Press clippings	$ 25	
51969— "	5 72	
52063—Directory	10 00	
52060—Press clippings	86	
53050— "	1 10	
53206— "	91	
54303— "	33	
55577— "	72	
56327— "	29	
56194— "	25	
		$20 43

MEAKINS & SONS, LTD., HAMILTON, ONT.

51199—Brushes	$11 17	
52059— "	36 44	
51688— "	3 42	
51820— "	8 68	
53162— "	47 31	
50993— "	19 60	
51138— "	68 94	
54447— "	49 83	
54164— "	21 82	
55481— "	58 71	
55476— "	58 87	
56197— "	18 80	
54482— "	40 38	
		$443 97

MAIL PRINTING CO., TORONTO, ONT.

50675—Subscription	$3 00	
		$3 00

MORGANS LOUISIANA & TEXAS R.R. & S.S. CO., NEW ORLEANS, LA.

50839—Car repairs	$8 83	
54057— "	34	
51936— "	1 47	
52844— "	1 65	
		$12 29

MISSOURI, OKLAHOMA & GULF RY. OF TEXAS, DENISON, TEX.

51059—Car repairs	$2 04	
53104— "	42	
		$2 46

JNO. MORROW SCREW & NUT CO., LTD., INGERSOLL, ONT.

51550—Screws	$47 78	
52277— "	3 98	
52396— "	4 81	
53571— "	87	
52404— "	4 87	
54162— "	5 20	
55479— "	8 27	
		$75 78

MONONGAHELA R.R. CO., PITTSBURGH, PA.

55263—Car repairs	$1 88	
		$1 88

PAUL MARCEAU, ENGINEERING DEPT., NORTH BAY, ONT.

54950—Donation *re* loss of outfit by fire	$59 50	
		$59 50

MACKENZIE & CO., TORONTO, ONT.

51170—Mounting and framing pictures	$2 00	
52115—Hanging portraits and framing	16 25	
55348—Framing pictures	5 75	
		$24 00

S. MALO, CAR DEPT., NORTH BAY, ONT.

51547—Travelling expenses	$10 25	
		$10 25

WM. MANN CO., PHILADELPHIA, PA.

52398—Waybill copy books	$46 00	
		$46 00

MONTGOMERY & FERGUSON, HAILEYBURY, ONT.

51875—Claim 8008	$40 30	
		$40 30

MARSH & TRUMAN LUMBER CO., CHICAGO, ILL.

51197—Lumber	$472 03	
53208— "	487 21	
54160— "	129 44	
		$1,088 68

MONTREAL COTTON & WOOL WASTE CO., LTD., MONTREAL, QUE.

51201—Wool waste	$140 55	
51540— "	189 01	
52247— "	190 52	
		$520 08

W. H. MINER CO., CHICAGO, ILL.

51203—Gear	$64 00	
52249—Thimbles	7 00	
51538—Castings	69 40	
52402— "	805 00	
54445— "	145 80	
		$1,091 20

JAMES MORRISON BRASS MFG. CO., LTD., TORONTO, ONT.

51205—Fittings	$81 72	
51542—Valves	57 43	
52245—Repair parts	48 84	
52404—Fittings	164 37	
53560— "	48 86	
53402— "	56 61	
54439— "	29 36	
54166—Repair parts	27 25	
54480—Parts for injector	13 03	
55477—Fittings	154 31	
55482—Valves and fittings	130 22	
56199—Fittings	83 67	
56306—Taps and dies	84 25	
		$979 92

MAPLE LEAF HOTEL, HAILEYBURY, ONT.

50517—Claim No. 9011	$ 95	
50573— " 9013	85	
50623— " 9010	1 10	
50596—Claims	34 50	
50610—Claim No. 9016	5 00	
52785—Claims	19 55	
		$61 95

R. L. & C. MALKIN, NELLIE LAKE, ONT.

51207—Lumber	$233 52	
51497—Switch sets	179 18	
52388—Slabs	14 25	
55116—Switch sets	395 25	
56468—Ties	79 95	
56468— "	106 70	
		$1,008 85

H. F. Macdonald, Accountant, Toronto, Ont.

50461—Salary	$165 00	
50476 "	165 00	
51521— "	165 00	
51832— "	165 00	
52953— "	165 00	
52774— "	165 00	
53813— "	165 00	
53692—Leave of absence with pay	165 00	
53700— " "	165 00	
53736— " "	165 00	
55641— " " 54376	165 00	
		$1,815 00

Minneapolis, St. Paul & Sault Ste. Marie Ry., Minneapolis, Minn.

50519—Claims	$31 66	
50833—Car repairs	8 19	
51055— "	6 14	
51335—Car service balance	19 35	
50956—Claim No. 8695	4 84	
51316—Car service balance	46 35	
51793—Car repairs	8 80	
52403—Car service balance	5 40	
52461—Ticket balance	18 10	
52527—Car repairs	96	
52584—Car service balance	15 75	
52997—Claim 8789	2 37	
53211—Car repairs	6 43	
53713—Car service balance	21 15	
52966—Claims 5870 and 9354	23 72	
53919—Claims 7278 and 7117 and 7055	109 05	
54053—Car repairs	20 00	
54559— "	7 81	
53964—Claim 9729	1 12	
54768—Car repairs	40 33	
54905—Claim 8777	1 03	
55016—Car repairs	38 27	
55825—Claim 10121	1 58	
56006—Car repairs	2 03	
56132—Claim 9353	1 19	
56426—Car service balance	4 95	
		$446 57

D. Murphy, Commissioner, Ottawa, Ont.

56468—Honorarium	$250 00	
50530—Travelling expenses	115 50	
52957—Honorarium	250 00	
53690— "	250 00	
55653— "	250 00	
		$1,115 50

F. J. Martyn, North Bay, Ont.

55556—Casket	$38 00	
55181—Ambulance service	3 00	
		$41 00

Marshall & Ecclestone, Ltd., Porcupine, Ont.

50622—Claim No. 8857	$11 00	
55691—Claim No. 1021 and No. 10190	3 11	
55821—Claim No. 10293	2 00	
52999— " 9673	2 50	
52732— " 8940	33 10	
		$51 71

F. MULLIGAN, MATHESON, ONT.

52290—Pulpwood	$46 44	
		$46 44

MUNICIPALITY OF TOWN OF MATHESON, ONT.

53704—Donation *re* grading and opening streets	$250 00	
54236— " " " "	250 00	
55002— " " " "	250 00	
		$750 00

MASTER CAR BUILDERS' ASSOCIATION, CHICAGO, ILL.

53846—Annual dues	$7 00	
56314—M.C.B. Rules	1 75	
		$8 75

A. E. MALLETTE, COCHRANE, ONT.

54973—Repairing lock	$1 50	
		$1 50

M. W. SUPPLY CO., PHILADELPHIA, PA.

54484—Rail anchors	$1,588 41	
		$1,588 41

MACKINAC TRANSPORTATION CO., GRAND RAPIDS, MICH.

51387—Ticket balance	$ 50	
		$ 50

MACKENZIE, MANN & CO., TORONTO, ONT.

54851—Claim No. 9351	$16 63	
		$16 63

M. R. MATTHEWS, MINDOKA, ONT.

54853—Claim No. 8879	$10 00	
		$10 00

MAPLE LEAF LUMBER CO., CONNAUGHT, ONT.

55127—Lumber	$630 09	
55415— "	210 03	
56168— "	105 18	
		$945 30

G. P. MURPHY, OTTAWA, ONT.

55483—Lumber	$393 19	
55484— "	885 55	
		$1,278 74

MISSOURI & NORTH ARKANSAS R.R., HARRISON, ARK.

51341—Car service balance	$13 05	
51322— " "	13 50	
52521—Car repairs	21	
55020— "	85	
		$27 61

MAINE CENTRAL RY., PORTLAND, ME.

51932—Car repairs	$1 83	
53193— "	66	
		$2 49

MICHIE & CO., LTD., TORONTO, ONT.

51721—Supplies for private cars	$51 78	
52923— " "	11 52	
53111— " "	18 55	
53194— " "	82 80	
55129— " "	27 63	
55765— " "	11 20	
55993— " "	15 05	
55816— " "	11 91	
		$230 44

W. R. MAHER, LOCATION ENGINEER, NORTH BAY, ONT.

51753—Travelling expenses	$7 40	
53043— " "	38 40	
54235— " "	32 60	
54948—Donation *re* loss of outfit by fire	90 00	
55949—Travelling expenses	50 05	
		$218 45

MORROW & BEATTY, LTD., TIMMINS, ONT.

51915—Replacing car on track	$25 00	
53715—Claim No. 9855 and 9909	54 08	
53706—Replacing car on track	67 37	
55689—Claim 10069	6 97	
55812—Team work	12 26	
		$165 68

WM. MILNE & SON, LTD., NORTH BAY, ONT.

52279—Lumber	$205 69	
		$205 69

MISSOURI, OKLAHOMA & GULF RY., MUSKOGEE, OKLA.

51136 Car repairs	$2 00	
		$2 00

MORRIS & CO., CHICAGO, ILL.

52407—Car service balance	$2 19	
		$2 19

MUSSENS, LTD., MONTREAL, QUE.

51672—Claim No. 8862	$17 24	
53398—Repair parts	112 10	
		$129 34

W. L. MACKIE, NORTH BAY, ONT.

56193—Shades	$ 80	
		$ 80

H. MUELLER MFG. CO., LTD., SARNIA, ONT.

56195—Meter	$222 50	
		$222 50

MINISTER OF INLAND REVENUE, OTTAWA, ONT.

56445—War tax on tickets and telegrams	$2,087 49	
54192— " " "	1,429 66	
		$3,517 15

MORIN & FRERE, COBALT, ONT.

55096—Claim No. 10087	$2 60	
		$2 60

METALLIC ROOFING CO. OF CANADA, LTD., TORONTO, ONT.

55474—Ventilator	$8 02	
		$8 02

JAMES MURPHY, NEW LISKEARD, ONT.

55554—Plumbing	$20 75	
		$20 75

HENRY MARLEAU, NORTH BAY, ONT.

55671—Moving stores building	$200 00	
		$200 00

GEO. O. MAITLAND, NORTH BAY, ONT.

55763—Roofing	$250 00	
		$250 00

H. D. MERRIMAN—ENGLEHART, ONT.

55845—Claim No. 10291	$1 00	
		$1 00

NORMAN MACDONALD, TORONTO, ONT.

56308—Aloxite Wheels	$19 08	
		$19 08

O. MARONDI, NORTH BAY, ONT.

50677—Unclaimed Wages	$1 90	
		$1 90

W. H. MAUND, SEC.-TREASURER, TORONTO, ONT.

50925—Disbursements	$25 85
50824— do	25 60
51991— do	52 10
52058— do	31 65
52683—Salary	208 33
52685— do (Toronto Staff)	105 00
52687—Treasurer's Advance to cover Petty Account	50 00
53029—Disbursements	35 20
52766—Salary—Toronto Staff	105 00
52770—Salary	208 33
52772—Salary—Toronto Staff	890 00
53080—Disbursements	49 00
53799—Salary—Toronto Staff	105 00
53809—Salary	208 33
53811—Salary—Toronto Staff	830 00
54145—Disbursements	41 75
53684—Salary	208 33
53686—Salary—Toronto Staff	830 00
53718—Salary—Toronto Staff	218 90
54012—Disbursements	42 60
54785—Salary	208 33
54787— do —Toronto Staff	860 00
54797— do do	155 00
54951—Disbursements	35 00
54806—Salary—Toronto Staff	175 00
54864—Salary	208 33

W. H. MAUND, SEC.-TREASURER, TORONTO, ONT.—*Continued.*

54866—Salary—Toronto Staff	$860 00	
54958—Disbursements	45 10	
55649—Salary	208 33	
55651—Salary—Toronto Staff	870 00	
55663—Salary—Toronto Staff	155 00	
55887—Disbursements	45 55	
55734—Salary—Toronto Staff	155 00	
55752—Salary	208 33	
55754—Salary—Toronto Staff	870 00	
55814—Disbursements	34 00	
		$9,363 94

MISSOURI, KANSAS & TEXAS RY. OF TEXAS, ST. LOUIS, MO.

50880—Car repairs	$2 67	
51044— do	74	
51791— do	1 20	
52525— do	1 22	
53217— do	94	
54284— do	4 18	
54770— do	2 45	
55265— do	1 40	
55018— do	57	
		$15 37

MONETARY TIMES OF CANADA, TORONTO, ONT.

50676—Advertising	$50 00	
50696—Subscription	3 00	
		$53 00

MILLER LAKE O'BRIEN MINE, GOWGANDA, ONT.

50954—Claim No. 9296	$6 00	
51861— " 8628	27 85	
52801— " 8664	201 89	
		$235 74

R. H. MITCHELL, AUDITOR, NORTH BAY, ONT.

51112—Travelling expenses	$7 25	
53041— do	6 75	
54914— do	11 95	
		$25 95

THOS. MAGLADERRY, ENGLEHART, ONT.

51913—Hardware supplies	$2 86	
51892— do	4 97	
		$7 83

T. MARTINDALE, KENABEEK, ONT.

54259—Ties	$55 60	
		$55 60

MASSEY-HARRIS CO., LTD., TORONTO, ONT.

51740—Claim No. 9198	$1 05	
52615—Claim 86219	1 05	
		$2 10

J. F. MULLIGAN, NEW LISKEARD, ONT.

52803—Claim No. 9159	$1 42	
		$1 42

J. H. Macdougall, Cobalt, Ont.

51742—Claim 8626	$6 84	
		$6 84

D. Monteith, Watahbeag, Ont.

52857—Pulpwood	$52 00	
		$52 00

A. B. Moisey & Co., Toronto, Ont.

52993—Claim 8355	$3 55	
		$3 55

Midwest Electric Co., Omaha, Neb.

51676—Air Compressor	$300 00	
		$300 00

Matthews Blackwell Co., Ltd., Toronto, Ont.

51678—Claim No. 9124	$11 02	
55930—Claim No. 10242	75	
		$11 77

Montreal Locomotive Works, Ltd., Montreal, Que.

52400—Exhaust pipes	$13 00	
53400—Castings	63 83	
		$76 83

G. A. Mitchell, Goldlands P.O., Ont.

50624—Claim 9162	$7 00	
		$7 00

W. C. Murray, Iroquois Falls, Ont.

52613—Claim No. 9298	$18 00	
		$18 00

Carl Mayer, Tomstown, Ont.

50620—Claim No. 8904	$10 00	
		$10 00

Mining Corporation of Canada, Cobalt, Ont.

52795—Claims Nos. 8033 and 7989	$243 33	
		$243 33

Map Specialty Co., Toronto, Ont.

51685—Preparing maps	$18 00	
		$18 00

Wm. Morrison, Sr., Porquis Jct., Ont.

52797—Claim No. 9593	$5 00	
		$5 00

John Millen & Son, Ltd., Montreal, Que.

54437—Annunciator	$25 20	
		$25 20

DR. H. H. MOORE, TIMMINS, ONT.

52799—Claim No. 9507	$12 45	
		$12 45

H. MASLIN, NAHMA, ONT.

52162—Pulpwood	$152 25	
		$152 25

A. T. MOTH, M. M. DEPT., NORTH BAY, ONT.

51273—Travelling expenses	$3 50	
		$3 50

MASON, GORDON & CO., MONTREAL, QUE.

52734—Claim No. 9165	$20 52	
55823—Claim No. 7587	25 08	
		$45 60

J. E. MILLS, WATAHBEAG, ONT.

52778—Pulpwood	$27 84	
		$27 84

T. J. MEAGLER, HAILEYBURY, ONT.

53977—Registry fee	$ 13	
		$ 13

FRANK MUNROE, MONTREAL, QUE.

51644—Estimate No. 4, Bridge Work Contracts	$2,525 59	
51687—Lumber	113 50	
		$2,639 09

MILWAY & IRELAND, COCHRANE, ONT.

51859—Claim No. 9156	$4 05	
		$4 05

WM. MAGLADERRY, NEW LISKEARD, ONT.

50668—Claim No. 9050	$1 55	
51536—Hose	31 00	
51599—Claims Nos. 9133 and 9147	6 66	
51744—Claims Nos. 9132 and 9049 and 9358	7 20	
55932—Claim No. 10188	77	
51634—Claims Nos. 9998 and 10163	8 45	
		$55 63

J. A. MACDONALD, K.C., TORONTO, ONT.

51971—Services rendered	$155 00	
53738— " "	150 00	
		$305 00

MINNEAPOLIS & ST. LOUIS R. R., MINNEAPOLIS, MINN.

51053—Car repairs	$20 55	
51795— " "	6 36	
51930— " "	20 78	
53215— " "	4 64	
52842— " "	1 08	
54051— " "	3 54	
54282— " "	368 08	
55269— " "	23	
55014— " "	4 52	
		$429 78

MINERAL RANGE R. R., MARQUETTE, MICH.

53761—Ticket balance	$0 47	
		$0 47

MONTOUR R. R., PITTSBURG, PA.

51337—Car service balance	$1 35	
51318— " " "	43 20	
54205— " " "	60 30	
52586— " " "	19 35	
53715— " " "	55 35	
53538— " " "	27 45	
54607— " " "	21 60	
54552— " " "	7 65	
55323— " " "	23 40	
55612— " " "	8 55	
56405— " " "	1 80	
		$270 00

MISSOURI, KANSAS & TEXAS RY., ST. LOUIS, MO.

51339—Car service balance	$16 65	
51328— " " "	10 35	
52514—Car repairs	1 85	
52588—Car service balance	5 40	
54554— " " "	5 85	
		$40 10

A. J. MCGEE, SEC.-TREASURER, TORONTO, ONT.

50453—Salary—Toronto Staff	$105 00	
50457—Salary	310 00	
50459—Salary—Toronto Staff	867 50	
50547—Disbursements	45 10	
50472—Salary	310 00	
50474—Salary—Toronto Staff	867 50	
50488—Salary— " "	105 00	
50514—Advance	75 00	
50602—Disbursements	45 14	
51501—Salary—Toronto Staff	105 00	
51519—Salary—Toronto Staff	867 50	
51517—Salary	310 00	
51525—Disbursements	29 75	
51650—Salary—Toronto Staff	105 00	
51828—Salary	320 00	
51830—Salary—Toronto Staff	890 00	
52951—Salary—Toronto Staff	890 00	
52949—Grant to Widow Late Mr. McGee	320 00	
52776— " " "	320 00	
53805— " " "	320 00	
53694— " " "	640 00	
53696—		
		$7,847 49

W. H. MCGRUTHER, WIDDIFIELD, ONT.

54451—Wood	$12 00	
		$12 00

H. H. MCGEE, TRAVELLING AUDITOR, NORTH BAY, ONT.

50927—Travelling expenses	$24 35	
50706— " "	31 40	
51997— " "	24 00	
51894— " "	40 00	
53365— " "	37 15	
53052— " "	48 25	

H. H. McGee, Travelling Auditor, North Bay, Ont.—*Continued.*

54161—Travelling expenses	$55 50	
54014— " "	46 00	
55071— " "	58 10	
55306— " "	61 35	
55951— " "	47 75	
		$473 85

J. McCoy, M. P. Dept., North Bay, Ont.

53363—Travelling Expenses	$3 15	
		$3 15

McCord & Co., Inc., Chicago, Ill.

53373—Journal Boxes	$92 40	
55486— " "	139 00	
52390— " "	75 00	
55413— " "	203 60	
		$510 00

J. C. McLeod, North Bay, Ont.

53821—Settlement *re* alleged injuries received	$23 78	
		$23 78

W. McClinsky, Monteith, Ont.

53777—Ties	$59 59	
54259— "	30 00	
56468—Switch Sets	79 05	
		$168 64

Wm. McDonald, North Bay, Ont.

52900—Settlement *re* alleged injuries received	$23 72	
		$23 75

J. R. McCrea, New Liskeard, Ont.

52968—Claim No. 8914	$1 30	
		$1 30

O. McKay, South Porcupine, Ont.

72970—Claim No. 9790	$3 00	
		$3 00

A. McMillan, King, Ont.

53072—Pulpwood	$52 60	
		$52 60

McDermott & Sullivan, Cobalt, Ont.

53808—Claim No. 9881	$2 25	
		$2 25

McPhee & Gardiner, Cochrane, Ont.

53850—Team Hire	$16 00	
		$16 00

McCleary's Livery, Haileybury, Ont.

53966—Claim No. 9876	$2 10	
		$2 10

MISS LAURA MCKEE, ELK LAKE, ONT.

54680—Rental, Telephone Line	$5 00	
		$5 00

T. E. MCEWAN, HAILEYBURY, ONT.

54682—Fertilizer	$1 50	
		$1 50

A. MCLEAN, TORONTO, ONT.

54869—Photographs	$10 00	
		$10 00

H. MCKNIGHT, COBALT, ONT.

54820—Claim No. 9882	$37 70	
		$37 70

MCKNIGHT & JONES, COCHRANE, ONT.

55934—Claim No. 10376	$18 00	
		$18 00

W. MCKNIGHT, NEW LISKEARD, ONT.

51601—Claim No. 9190	$1 80	
		$1 80

J. P. MCLAUGHLIN, TIMMINS, ONT.

51603—Claims Nos. 8995 and 9429	$3 01	
51617—Claims Nos. 8991 and 9577	5 35	
52805—Claim No. 8992	5 43	
52972—Claims Nos. 9575 and 9705	28 18	
53851—Claim No. 9712	1 83	
53968— " 9926	9 57	
55098— " 9572	3 90	
55926— " 9478	21 95	
		$79 22

J. & J. MCBURNEY, NORTH BAY, ONT.

52281—Lumber	$419 56	
51690— "	223 20	
53575— "	40 48	
53414— "	98 00	
55488— "	62 40	
56318— "	699 11	
		$1,542 75

H. P. MCQUIGGAN, THORNLOE, ONT.

51746—Claim No. 9473	$1 18	
		$1 18

MCINTYRE PORCUPINE MINES, LTD., SCHUMACHER, ONT.

53713—Claim No. 9073	$44 44	
		$44 44

G. MCINTOSH, SOUTH PORCUPINE, ONT.

53001—Claim No. 9628	$2 45	
		$2 45

MCWILLIAMS & EVEREST, TORONTO, ONT.

53003—Claim No. 9564	$46 54	
		$46 54

JOHN McDONALD, COCHRANE, ONT.

50628—Claim No. 8686	$17 15	
		$17 15

CHAS. McKENZIE, ELK LAKE, ONT.

50772—Team hire	$10 50	
		$10 50

J. M. McNAMARA, NORTH BAY, ONT.

50876—Legal services rendered	$10 10	
53201— do do	18 26	
56086— do do	18 49	
		$46 85

J. P. McVICAR, INWOOD, ONT.

51546—Hay	$184 33	
		$184 33

McCOLL BROS. & CO., TORONTO, ONT.

51548—Soap	$33 11	
51748—Claim No. 9072	6 25	
55491—Soap	35 00	
56203—Soap	34 16	
		$108 52

McCLEARY MFG. CO., HAMILTON, ONT.

52392—Stove parts	$2 15	
55487—Stove	28 74	
56310—Stove parts	42	
		$31 31

G. W. McDONALD, NORTH BAY, ONT.

53408—Screws	$ 20	
		$ 20

McAUSLAN & ANDERSON, NORTH BAY, ONT.

51467—Services rendered and expenses	$35 50	
52062— " " "	24 00	
53979— " " "	64 50	
54305 " " "	32 00	
53848—Services rendered	15 00	
55617—Services rendered and expenses	54 50	
55767—Services rendered	28 00	
55818— " "	35 00	
56482—Services rendered and expenses	146 30	
		$434 80

J. C. McNABB & CO., LTD., COBALT, ONT.

50626—Claim No. 9122	$8 05	
51750— " 9466	1 80	
54058— " 9669	4 50	
		$14 35

McCORD MFG. CO., DETROIT, MICH.

51544—Gaskets	$9 05	
52394— "	5 03	
53406— "	4 87	
55489— "	8 23	
56320— "	1 44	
		$28 62

M. McCauley, North Cobalt, Ont.

55827—Claim No. 10092	$6 00	
		$6 00

J. A. McFarlane, Englehart, Ont.

56084—Cartage	$3 65	
		$3 65

R. McDougall Co., Ltd., Galt, Ont.

56316—Hose	$34 50	
		$34 50

McLellan & Co., New Liskeard, Ont.

56476—Claim No. 10501—Siding rebate	$14 38	
		$34 50

A. McClure, Inspector, North Bay, Ont.

50703—Travelling expenses	$15 30	
52014— " "	13 65	
50704— " "	19 85	
		$48 80

E. McKenny, M. P. Dept., North Bay, Ont.

50929—Travelling expenses	$9 85	
		$9 85

N. J. McCubbin, North Bay, Ont.

53410—Uniforms	$368 00	
54168— "	22 00	
55485— "	173 50	
56201—Uniform	18 50	
		$582 00

MacBride Press, Ltd., Brantford, Ont.

53412—Books and forms	$25 65	
54449— " "	19 75	
		$45 40

W. M. McMillan, Car Dept., North Bay, Ont.

52204—Travelling expenses	$1 20	
54726— " "	5 15	
		$6 35

Northern Canada Supply Co., Limited, Cobalt, Ont.

50483—Claim No. 8101	$2 12	
50583— " 8679 and 9192—Siding rebate, etc	36 22	
50639— " 8560	6 71	
50630— " 6144	1 61	
50964— " 7911	26 30	
51535— " 6619 and 9510—Siding rebate, etc	89 39	
51605— " 9409—Siding rebate	8 00	
51865— " 9088	9 57	
51754— " 9551 and 8971—Siding rebate, etc	112 00	
52619— " 9595—Siding rebate	266 00	
52809— " 9738—Siding rebate	10 00	
52811— " 9419	1 69	
52976— " 9841, 9490 and 9491	10 46	
52978— " 9753	6 75	

NORTHERN CANADA SUPPLY CO., LIMITED, COBALT, ONT.—*Continued.*

53853—Claim No. 9651	$2 26		
53923— " 9929—Siding rebate	12 00		
53810— " 10026— " "	6 00		
54070— " 10123— " "	6 00		
54909— " 10130	84		
54848— " 9803 and 9891	18 78		
55102— " 10181—Siding rebate	10 00		
55833— " 9941	22 56		
			$665 26

NASHVILLE, CHATTANOOGA & ST. LOUIS RY., NASHVILLE, TENN.

51353—Car service balance	$6 30		
50890—Car repairs	2 42		
52272— " "	45		
52600—Car service balance	2 25		
52856—Car repairs	4 49		
54069— " "	1 67		
54296— " "	4 68		
55030— " "	1 15		
			$23 41

NEW ONTARIO COLONIZATION CO., BUFFALO, N.Y.

50485—Claim No. 8993	$3 00		
50870— " 7929	4 53		
50962— " 9172	6 24		
			$13 77

NORTH AMERICAN BENT CHAIR CO., OWEN SOUND, ONT.

51211—Wood chairs	$8 40		
52293—Chairs	16 80		
54170— "	8 40		
55490— "	8 40		
			$42 00

S. NORFOLK, HAILEYBURY, ONT.

52813—Claim No. 9657 and 9720	$2 22		
52974— " 9659	1 35		
55100— " 10124	3 85		
			$7 42

R. NEELY, THORNLOE, ONT.

54775—Fence braces	$75 00		
55116—Fence posts	51 12		
56468—Fence posts	47 70		
56468—Ties	49 50		
			$223 32

NIPISSING LAUNDRY CO., LIMITED, NORTH BAY, ONT.

50774—Laundry	$5 68		
50776— "	3 60		
52065— "	96		
51119— "	2 76		
51980— "	1 47		
52138— "	3 08		
52184— "	1 33		
52412— "	8 55		
52875— "	99		
52877— "	1 72		
53435— "	2 05		
53437— "	1 92		

NIPISSING LAUNDRY CO., LIMITED, NORTH BAY, ONT.—*Continued.*

53577—Laundry	$5 40	
53656— "	5 14	
53658— "	1 80	
54721— "	1 60	
55493— "	6 00	
53852— "	90	
54240— "	3 43	
54624— "	2 84	
54922— "	7 92	
55232— "	1 44	
55572— "	5 25	
56209— "	18 00	
56365— "	2 13	
55820— "	2 10	
56326— "	21 00	
		$119 06

NORTHERN ELECTRIC CO., LIMITED, TORONTO, ONT.

51215—Phone materials	$626 95	
51556—Wire	75 24	
52303—Electrical supplies	490 36	
52416—Batteries	223 54	
53665—Electrical supplies	80 39	
53418— " "	90 61	
54453— " "	115 11	
54174—Wire and supplies	80 68	
55497—Electrical supplies	931 99	
55492— " "	344 88	
52605— " "	90 09	
56322— " "	504 34	
		$3,654 18

NEW YORK CENTRAL RAILROAD CO., NEW YORK, N.Y.

50845—Car repairs	$3 98	
50892—Car repairs	11 20	
51863—Claim No. 8888	34 16	
52409—Car service balance	118 30	
52529—Car repairs	13 63	
51940—Car repairs	36 70	
52590—Car service balance	30 30	
52642—Ticket balance	9 65	
53219—Car repairs	62 46	
52918— " "	69 70	
51067— " "	33 40	
54649—Car service balance	1 75	
54235—Car repairs	36 10	
54592—Ticket balance	201 95	
54778—Car repairs	52 45	
54907—Claim No. 5648	15 17	
55011—Pamphlets *re* "Safety of Trains"	40 00	
55032—Car repairs	50 86	
56055— " "	21 74	
56498*b*—" "	146 16	
		$989 66

NORTHERN PACIFIC RAILWAY, ST. PAUL, MINN.

50847—Car repairs	$9 37	
50884— " "	17 87	
51938— " "	18 05	
52274— " "	6 23	
52592—Car service balance	5 40	
53221—Car repairs	8 51	
54290— " "	1 55	
54776— " "	12 17	
		$79 15

NEW YORK, NEW HAVEN & HARTFORD R. R., NEW HAVEN, CONN.

50894—Car service balance	$11 50	
52415— " " "	58 50	
52598— " " "	9 45	
53721— " " "	40 95	
53108—Car repairs	5 62	
53542—Car service balance	30 60	
54611— " " "	17 55	
54556— " " "	11 25	
55271—Car repairs	11 11	
55616—Car service balance	45	
56059—Car repairs	2 30	
56407—Car service balance	28 35	
56008—Car repairs	1 50	
56430—Car service balance	11 70	
		$240 83

NORFOLK & WESTERN RY., ROANOKE, VA.

50841—Car repairs	$14 83	
51063—Car repairs	4 39	
51347—Car service balance	36 25	
50886—Car repairs	56 24	
51328—Car service balance	19 35	
51797—Car repairs	4 52	
52518—Car repairs	8 07	
52596—Car service balance	117 90	
53719—Car service balance	40 05	
53106—Car repairs	5 83	
53540—Car service balance	97 65	
54071—Car repairs	2 77	
54609—Car service balance	32 85	
54294—Car repairs	2 77	
54780— "	40	
55024— "	9 72	
55614—Car service balance	8 55	
55428— " "	5 40	
52413— " "	109 35	
53237—Car repairs	6 86	
		$583 75

NEW ORLEANS & NORTHEASTERN R.R., NEW ORLEANS, LA.

50843—Car repairs	$3 30	
50858— "	5 86	
55212— "	45	
55620—Car service balance	9 00	
52520—Car repairs	58	
53223— "	3 66	
54063— "	1 60	
54292— "	1 12	
56061— "	11 50	
		$37 07

NIAGARA, ST. CATHARINES & TORONTO RY., TORONTO, ONT.

50960—Claim No. 8565	$1 14	
52621— " 8631	2 64	
52807— " 7381	131 49	
55831— " 8816	1 32	
		$136 59

NEW YORK, CHICAGO & ST. LOUIS R.R., CLEVELAND, O.

50896—Car service balance	$2 09	
51324—Car service balance	8 90	
53229—Car repairs	7 82	
54061— "	39 95	
54772— "	39 53	
55273— "	3 86	
55026— "	12 03	
56053— "	3 26	
		$117 38

NEW ORLEANS, MOBILE & CHICAGO R.R., MOBILE, ALA.

51799—Car repairs	$5 96	
52531—Car repairs	3 25	
		$9 21

NICHOLSON FILE CO., PORT HOPE, ONT.

51213—Files	$15 19	
50730— "	77 83	
51661— "	18 42	
52012— "	11 02	
52741— "	12 62	
53164— "	15 53	
54195— "	13 89	
53886— "	6 16	
55089— "	25 40	
55322— "	32 74	
56028— "	5 41	
		$234 21

NATIONAL DRUG & CHEMICAL CO. OF CANADA, LIMITED, TORONTO, ONT.

51217—Chemicals	$29 65	
51552—Chamois	20 10	
52301—Chamois	5 50	
52408—Chemicals	28 84	
53663— "	6 30	
53416— "	14 90	
54455—Sponges and chamois	7 50	
54172—Chemicals	16 63	
55541— "	47 53	
55494— "	5 67	
56211— "	64 35	
56324— "	4 20	
		$251 17

FRANCIS NAULT, PORQUIS JUNCTION, ONT.

51064—Donation, account cow alleged struck	$25 00	
		$25 00

A. O. NORTON, LIMITED, COATICOOK, QUE.

51554—Track Jacks	$27 86	
		$27 86

NEW YORK & PENNSYLVANIA CO., JOHNSONBURG, PA.

51867—Claim No. 9561	$33 00	
52117—Refund of deductions in error	27 00	
		$60 00

NEW YORK DESPATCH REFRIGERATOR LINE, CHICAGO, ILL.

52980—Claim No. 9145	$2 11	
		$2 11

NIAGARA FRONTIER SUMMER RATE COMMITTEE, MONTREAL, QUE.

50770—Proportion of expenses	$23 20	
		$23 20

H. J NICHOLS, ENGINEERING DEPT., COCHRANE, ONT.

51858—Travelling expenses	$17 55	
		$17 55

NORTHWESTERN EXPANDED METAL CO., CHICAGO, ILL.

52410—Wire baskets	$1 65	
		$1 65

NATHAN MANUFACTURING CO., NEW YORK, N.Y.

53661—Valves	$57 00	
		$57 00

NATIONAL LIFE ASSURANCE CO. OF CANADA. TORONTO, ONT.

50445—Rent of general offices	$293 75	
50484— " "	293 75	
51511— " "	293 75	
51660— " "	293 75	
52697— " "	293 75	
52758— " "	293 75	
53801— " "	293 75	
53720— " "	293 75	
54799— " "	293 75	
54808— " "	293 75	
55665— " "	293 75	
55736— " "	293 75	
		$3,525 00

NIPISSING MINING CO., LIMITED, COBALT, ONT.

50481—Claim No. 8805	$231 72	
50958— " 8417	469 03	
51238— " 9288	24 27	
54121— " 8016	23 00	
53970— " 9983	44 28	
		$792 30

NEW LISKEARD WATER COMMISSION, NEW LISKEARD, ONT.

50959—Water supplied	$247 50	
53856—Water supplied	225 00	
		$472 50

NORTHERN CANADA POWER CO., LTD., TIMMINS, ONT.

50634—Claim No. 8994	$9 87	
52815— " 9304	3 35	
52982— " 9513	53 74	
54123— " 8996	28 15	
		$95 11

NIPISSING FOUNDRY & MACHINE CO., LTD., NORTH BAY, ONT.

53399—Castings	$148 02	
54040—Repairing lawn mower	1 25	
		$149 27

NORTH BAY TIMES, NORTH BAY, ONT.

51990—Advertising	$5 40	
		$5 40

NORTH BAY LIGHT, HEAT & POWER CO., LTD., NORTH BAY, ONT.

50778—Current supplied	$ 50	
51725—Current supplied	58	
52067—Pole	4 00	
52270—Current supplied	65	
52406—Radiator	25 50	
52929—Current supplied	50	
53657— "	58	
53660— "	50	
53856— "	50	
54488— "	50	
55495—Switch	40 00	
55607—Current supplied	50	
55678— "	50	
56345— "	50	
		$75 31

NATIONAL STANDARD CO., NILES, MICH.

51209—Track drill	$25 35	
52295—Ball bearings	2 37	
		$27 72

NEW ORLEANS & GREAT NORTHERN R. R., BOGULUSA, LA.

51343—Car service balance	$7 65	
53225—Car repairs	7 10	
52854— "	53	
56057— "	46	
		$15 74

NEW YORK, SUSQUEHANNA & WESTERN R. R., NEW YORK, N.Y.

51345—Car service balance	$6 30	
51326— " "	5 85	
52411— " "	45	
52594— " "	4 05	
53717— " "	1 80	
		$18 45

NORFOLK & SOUTHERN RAILWAY, NORFOLK, VA.

51351—Car service balance	$0 90	
54065—Car repairs	3 33	
55325—Car service balance	5 40	
55034—Car repairs	63	
55618—Car service balance	2 25	
		$12 51

NEW YORK, ONTARIO & WESTERN RY., NEW YORK, N.Y.

51349—Car service balance	$1 35	
52852—Car repairs	48	
54073—Car repairs	1 01	
54613—Car service balance	1 80	
54558—Car service balance	45	
55275—Car repairs	24	
56010—Car repairs	46	
		$5 79

NEW ORLEANS PUBLIC BELT RY., NEW ORLEANS, LA.

54560—Car service balance	$0 90	
		$0 90

NEW ORLEANS TERMINAL CO., NEW ORLEANS, LA.

54774—Car repairs	$3 86	
56063— "	1 24	
		$5 10

NEW ORLEANS, TEXAS & MEXICO R.R., NEW ORLEANS, LA.

55028—Car repairs	$0 47	
		$0 47

NICHOLS CHEMICAL CO., LIMITED, MONTREAL, QUE.

56207—Acid	$29 78	
		$29 78

A. NEW, WIDDIFIELD, ONT.

55889—Donation *re* cow alleged killed	$40 00	
		$40 00

NIPISSING POWER CO., LIMITED, NORTH BAY, ONT.

51469—Current, lighting	$136 26	
51727— " "	130 16	
51978— " "	132 99	
52688— " "	128 78	
53397— " "	84 88	
53654— " "	70 74	
54771— " "	67 02	
54684— " "	55 88	
55605— " "	52 26	
55682— " "	51 83	
56445— " "	63 77	
56496— " "	93 97	
		$1,068 54

NORTHERN CANADIAN FUR CO., LIMITED, WHITE FISH, QUE.

53005—Claim No. 8832	$2 81	
		$2 81

NEW ENGLAND PASSENGER ASSOCIATION, BOSTON, MASS.

53196—Proceedings (copies)	$10 00	
		$10 00

NATIONAL RAILWAYS OF MEXICO, CITY OF MEXICO, MEX.

53544—Car service balance	$8 10	
		$8 10

NATIONAL MALLEABLE CASTING CO., CLEVELAND, OHIO.

52414—Fasteners	$3 50	
53659—Car door parts	3 50	
		$7 00

NATIONAL RAILWAY PUBLICATION CO., NEW YORK, N.Y.

52222—Representation in "Official Guide"	$30 00	
53453—Subscriptions to "Official Guide"	7 80	
54935— " " "	7 80	
54916—Representation in "Official Guide"	30 00	
53047—Subscription to "Official Guide"	50	
		$76 10

TOWN OF NORTH BAY, NORTH BAY, ONT.

50957—Water supplied	$266 00	
51471— "	196 91	
51723— "	225 40	
51926— "	229 81	
52656— "	150 92	
53455— "	25 50	
53461— "	312 13	
53596— "	110 60	
54769— "	261 24	
54686— "	212 24	
55615— "	152 95	
54918— "	12 75	
55680— "	211 75	
56447— "	209 02	
56484— "	362 25	
		$2,939 47

NORTHERN ONTARIO LIGHT & POWER CO., LTD., COBALT, ONT.

50641—Claim No. 8178	$11 89	
50632— " 8929	7 05	
50780—Current	50 35	
51917 "	56 99	
51752—Claim No. 9430	19 50	
51896—Current	56 43	
52879— "	40 43	
53439— "	28 11	
53638— "	21 47	
53921—Claim No. 9933, siding rebate	126 00	
54693—Current	17 71	
54626— "	18 03	
55183— "	14 75	
55564— "	16 67	
55829—Claim No. 9440, siding rebate	44 00	
56329—Current	29 31	
56136—Claim No. 10194	9 25	
56498—Current	40 75	
		$608 69

NORTHERN ONTARIO LIGHT & POWER CO., LTD., HAILEYBURY, ONT.

50782—Current	$8 43	
51921— "	10 19	
51982— "	8 75	
52883— "	5 79	
53441— "	4 35	
53642— "	4 11	
54630— "	6 94	
55185— "	1 95	
55568— "	1 31	
56333— "	3 47	
53858—Thawing pipes at station	5 00	
		$60 29

NORTHERN ONTARIO LIGHT & POWER CO., LTD., SCHUMACHER, ONT.

50786—Current	$18 10	
51929— "	20 82	
53650— "	37 92	
54701— "	5 94	
54638— "	4 42	
55611— "	3 94	
55566— "	4 34	
56341— "	5 94	
		$101 42

NORTHERN ONTARIO LIGHT & POWER CO., LTD., NEW LISKEARD, ONT.

50784—Current		$12 49	
51012—	"	4 49	
51923—	"	13 46	
51984—	"	13 62	
52885—	"	9 94	
53443—	"	9 30	
53644—	"	8 10	
54695—	"	7 86	
54632—	"	7 38	
55187—	"	4 41	
55570—	"	4 41	
56335—	"	11 16	
			$106 62

NORTHERN ONTARIO LIGHT & POWER CO., LTD., PORCUPINE, ONT.

50961—Current		$9 29	
51925—	"	12 33	
51986—	"	7 21	
52925—	"	5 85	
53445—	"	3 85	
53646—	"	3 85	
54697—	"	2 33	
54634—	"	2 57	
55189—	"	5 61	
55562—	"	4 65	
56337—	"	5 45	
			$62 99

NORTHERN ONTARIO LIGHT & POWER CO., LTD., SOUTH PORCUPINE, ONT.

50788—Current		$15 21	
51927—	"	20 58	
51988—	"	16 58	
52927—	"	9 62	
53447—	"	6 18	
53648—	"	5 46	
54699—	"	4 90	
54636—	"	4 74	
55191—	"	5 22	
55560—	"	6 66	
56339—	"	10 02	
			$105 17

NORTHERN ONTARIO LIGHT & POWER CO., LTD., NORTH COBALT, ONT.

51919—Current		$16 78	
			$16 78

NORTHERN ONTARIO LIGHT & POWER CO., LTD., TIMMINS, ONT.

50790—Current		$17 77	
51014—	"	23 46	
51931—	"	54 28	
51990—	"	3 53	
53449—	"	103 95	
53652—	"	25 48	
54703—	"	9 06	
54038—	"	10 18	
54640—	"	8 18	
54688—	"	7 86	
55613—	"	8 58	
55558—	"	8 10	
55597—	"	17 16	
56343—	"	11 46	
55824—	"	12 02	
			$321 07

NORTHERN ONTARIO LIGHT & POWER CO., LTD., COCHRANE, ONT.

50792—Current	$85 60	
51898— "	12 00	
52881— "	2 16	
53451— "	1 12	
53640— "	88	
54628— "	25 68	
55609— "	35 92	
54920— "	14 88	
55995— "	36 40	
56331— "	1 68	
55822— "	15 76	
56498L— "	36 48	
		$268 56

OREGON SHORT LINE R. R.—SALT LAKE CITY, UTAH.

Voucher.

50849—Car repairs	$21 32	
51355—Car service balance	3 15	
50898—Car repairs	1 94	
51942— "	3 63	
53293—Car service balance	13 60	
54075—Car repairs	32	
		$43 96

OREGON, WASHINGTON RAILROAD & NAVIGATION CO., PORTLAND, ORE.

51330—Car service balance	$2 25	
52417— " "	90	
51944—Car repairs	27	
52602—Car service balance	3 15	
52644—Ticket balance	69	
52858—Car repairs	94	
54651—Car service balance	4 96	
		$13 16

C. G. ORTTENBERGER, CHICAGO, ILL.

55769—Envelopes	$8 21	
		$8 21

OGILVIE FLOUR MILLS CO., LTD., FORT WILLIAM, ONT.

55936—Claim No. 10348	$3 00	
		$3 00

OFFICE SPECIALTY MFG. CO., LTD., TORONTO, ONT.

51219—Filing tags	$1 10	
51558—Cards for index cases	7 25	
52285—Vertical sections	15 75	
52420—Cabinet covers	3 50	
53583—Cabinet	21 00	
54309—Castors	75	
54459—Index cards	1 91	
55499—Cards and boards	8 00	
56328— " "	1 95	
		$59 12

J. A. OGILVIE & SONS, MONTREAL, QUE.

51221—Flags	$3 90	
51560— "	16 38	
54457— "	6 24	
54176— "	10 80	
55503— "	10 80	
55498— "	12 96	
56213— "	8 64	
		$69 72

W. J. Oldham, Sup't B. & B. Dep't, North Bay, Ont.

51275—Travelling expenses	$13 55	
51184— " "	9 25	
51860— " "	8 50	
52252— " "	9 00	
53369— " "	16 10	
53248— " "	15 75	
54761— " "	11 50	
54702— " "	12 50	
55073— " "	11 30	
55256— " "	2 75	
55961— " "	2 85	
56066— " "	15 75	
		$128 80

Official Classification Committee, New York, N.Y.

51172—Classifications	$1 97	
52069—Supplements thereto	60	
51994— " "	1 68	
52931— " "	2 52	
53198— " "	1 71	
54307— " "	3 21	
54924— " "	44	
		$12 13

O'Brien, McDougall & O'Gorman, Hearst, Ont.

50643—Claim No. 7270, 8745 and 8614	$100 12	
50636— " 8847, 8848	60 98	
		$161 10

D. O'Connor, Barber's Bay, Ont.

51497—Piles	$120 00	
		$120 00

L. O'Connor, Temagami, Ont.

50520—Lots at Temagami, Nos. 527, 531, 547, 548	$3,500 00	
		$3,500 00

Owen Sound Sun, Owen Sound, Ont.

51240—Advertising	$2 00	
		$2 00

Ontario Reformatory Industries, Toronto, Ont.

51570—Brooms and Brushes	$59 50	
52287— " "	38 25	
52418— " "	38 25	
53581— " "	38 25	
55496— " "	42 50	
56215— " "	21 25	
		$238 00

Otley Paint Mfg. Co., Chicago, Ill.

52283—Cement	$17 48	
55501—Paint	16 13	
		$33 61

A. B. Odlum, Toronto, Ont.

52106—Expenses	$11 25	
55537— "	5 00	
		$16 25

W. H. Oke, Cobalt, Ont.

52623—Claim No. 9498	$4 00	
		$4 00

S. Oscar, Schumacher, Ont.

53877—Claim No. 9497	$3 84	
		$3 84

Ostrasser & Co., Schumacher, Ont.

54125—Claim No. 9778	$14 00	
		$14 00

Onward Manufacturing Co., Berlin, Ont.

54178—Furniture shoes	$5 04	
		$5 04

The Pullman Co., Chicago, Ill.

51239—Car parts	$9 05	
52195—Water tank	149 50	
52428—Car parts	62 55	
53585— "	48 00	
56347—Rental private car, "Iolanthe"	82 22	
		$351 32

Palmer & Packer Co., Boston, Mass.

52291—Mahógany	$86 05	
56336— "	61 35	
		$147 40

Penn Canadian Mines, Cobalt, Ont.

52938—Claim No. 9264	$44 00	
53855— " 9864	95	
53925— " 9869	22 04	
53972— " 9865	3 74	
		$70 73

Power Specialty Co., New York, N. Y.

54473—Springs	$8 40	
52426— "	8 40	
56223— "	8 40	
		$25 20

A. B. Pratt, Toronto, Ont.

52140—Expenses	$1 00	
		$1 00

Porcupine Telephone Lines Limited, South Porcupine, Ont.

52933—Telephone rental	$33 00	
54244— " "	66 00	
55193— " "	33 00	
54928— " "	63 00	
		$195 00

Portland, Eugene & Eastern Ry. Co., Portland, Ore.

52612—Car service balance	$5 40	
53729— " "	4 95	
		$10 35

PITTSBURG, CHARTIERS, YOUGHIOGHENY RY. CO., PITTSBURG, PA.

53554—Car service balance	$11 70	
		$11 70

PITTSBURG, SHAWMUT & NORTHERN R. R. NEW YORK, N. Y.

54079—Car repairs	$0 73	
54302— "	49	
56432—Car service balance	5 85	
		$7 07

PEDLAR PEOPLE LIMITED, OSHAWA, ONT.

54469—Iron culverts	$376 98	
55502— "	206 45	
56225— "	113 40	
		$696 83

PRESSED PRISM PLATE GLASS CO., CHICAGO, ILL.

54467—Glass	$5 42	
		$5 42

PEERLESS TRANSIT LINES, CLEVELAND, OHIO.

54129—Claim No. 9426	$10 06	
55626—Car service balance	3 79	
56413— "	7 59	
56434— "	11 38	
		$32 76

PANTASOTE CO., NEW YORK, N.Y.

54180—Agasote	$100 15	
56227— "	14 04	
56332—Pantasote	55 89	
		$170 08

POMEROY & FISCHER, NEW YORK, N.Y.

54182—Paints	$54 00	
		$54 00

OSCAR PETERSON, CHARLTON, ONT.

55047—Award Workmen's Compensation Board *re* alleged injuries	$7 11	
		$7 11

W. B. PEARCE, SOUTH PORCUPINE, ONT.

54850—Claim No. 10068	$15 26	
		$15 26

A. L. PERKINS, POWASSAN, ONT.

55697—Claim No. 10093	$13 09	
		$13 09

L. PELKIE, ROAD DEPT., THORNLOE, ONT.

55258 –Travelling expenses	$2 75	
		$2 75

PITTSBURG & LAKE ERIE R.R., PITTSBURG, PA.

50859—Car repairs	$8 16	
51067— "	1 22	
50900— "	16 76	
51376— "	2 70	
52539— "	1 36	
52526— "	1 42	
52625—Claim No. 9208	4 12	
53233—Car repairs	4 54	
52864— "	27	
54081— "	11 55	
54306— "	10 53	
54784— "	7 62	
55046— "	12 88	
55837—Claim No. 9964	2 15	
		$85 28

PEORIA & PEKIN UNION RY. CO., PEORIA, ILL.

50855—Car repairs	$0 70	
51801— "	9 82	
52862— "	76	
		$11 28

PAGE HERSEY IRON TUBE & LEAD CO., LTD., TORONTO, ONT.

50995—Iron pipe	$61 03	
51576— "	39 92	
52073— "	43 42	
52014— "	16 52	
52743— "	15 84	
54197— "	22 97	
53888— "	28 43	
55033— "	45 73	
55205— "	95 36	
54878— "	20 79	
54970— "	100 38	
55326— "	56 80	
55745— "	29 49	
55911— "	38 78	
55900— "	88 33	
		$703 79

N. L. PIPER RAILWAY SUPPLY CO., LTD., TORONTO, ONT.

51231—Supplies	$77 00	
51562—Tallow pots, oil feeders and lamps	210 73	
52313—Flagging outfit, cases and repair parts	118 15	
52430—Mop rags	7 00	
53595—Lanterns, wicks and burners	87 23	
53424—Globes, burners, etc.	38 20	
54461—Mop rags, pumps and lenses	35 65	
54496—Lanterns, oil feeders and mops	92 65	
55509—Lanterns, globes and pails	54 44	
55576—Lantern burners and repair parts	77 97	
56221—Headlight chimneys and mop rags	49 25	
56338—Burners, lamps, etc.	33 12	
		$881 39

WILLIAM POLLOCK & SONS, ENGLEHART, ONT.

51223—Lumber	$247 20	
		$247 20

H. L. Piper Co., Ltd., Montreal, Que.

51225—Burners	$6 25	
53426—Lenses	21 60	
56342—Burners	1 16	
53489—Lamps, burners, etc.	45 51	
		$74 52

H. Picard, North Bay, Ont.

51229—Supplies	$3 92	
52307— "	5 88	
55505— "	5 08	
		$14 88

Pratt & Whitney Co. of Canada, Ltd., Dundas, Ont.

51235—Tools	$4 10	
53593—Caps and dies	18 10	
55504— "	3 91	
		$26 11

G. R. Prowse Range Co., Ltd., Montreal, Que.

51237—Range	$145 00	
		$145 00

Thomas Pink Co., Ltd., North Bay, Ont.

50732—Peavies	$6 51	
		$6 51

Pearce Meat Co., Ltd., North Bay, Ont.

51578—Meats supplied	$29 80	
52422— "	20 90	
52712— "	2 15	
53420— "	60 79	
54463— "	220 90	
54186— "	152 70	
54494— "	78 51	
55507— "	111 64	
55510— "	11 60	
56344— "	83 14	
		$772 13

The Planet, Chatham, Ont.

51241—Printed forms	$6 50	
51574— "	33 25	
52311— "	45 03	
52434— "	7 50	
53591— "	14 25	
53422— "	61 90	
54465— "	25 75	
54184— "	19 50	
55573— "	56 50	
55500— "	52 95	
56330— "	59 00	
		$382 13

Pilkington Bros., Limited, Toronto, Ont.

51227—Glass	$45 84
51140— "	1 75
51663— "	22 34
52071— "	6 45

PILKINGTON BROS., LIMITED, TORONTO, ONT.—*Continued.*

52289—Glass	$85 64	
51692— "	63 53	
52016— "	60 17	
53075— "	23 52	
52786— "	10 84	
53890— "	29 99	
54880— "	6 47	
55324— "	153 75	
55506— "	70 06	
55971— "	118 70	
56291— "	2 03	
56030— "	27 52	
		$728 60

PERE MARQUETTE RAILROAD, DETROIT, MICH.

50853—Car repairs	$3 90	
51564— "	4 19	
52421—Car service balance	36 45	
52533—Car repairs	9 66	
52528— "	16 00	
52606—Car service balance	29 10	
53231—Car repairs	9 66	
53725—Car service balance	17 15	
53548— "	110 25	
54077—Car repairs	2 11	
54617—Car service balance	37 35	
54300—Car repairs	9 32	
54564—Car service balance	31 05	
55329— "	9 90	
54926—Car repairs	1 07	
55040 "	8 33	
55214— "	9 13	
55622—Car service balance	19 80	
56283—Ticket balance	8 13	
		$372 55

PHILADELPHIA & READING RAILROAD, PHILADELPHIA, PA.

50857—Car repairs	$2 75	
51067— "	5 76	
50902— "	2 34	
51332—Car service balance	10 80	
52419— "	24 75	
52534—Car repairs	6 11	
52524— "	3 00	
52604—Car service balance	71 10	
53231—Car repairs	91	
53723—Car service balance	20 45	
53765—Ticket balance	3 10	
53546—Car service balance	69 30	
54983—Car repairs	10 95	
54615—Car service balance	4 05	
54206—Car repairs	1 73	
54562—Car service balance	17 55	
55327— "	15 30	
55555—Ticket balance	6 00	
55038—Car repairs	3 41	
56409—Car service balance	8 55	
56012—Car repairs	1 35	
		$289 26

PENNSYLVANIA RAILROAD CO., NEW YORK, N.Y.

50851—Car repairs	$55 07	
51065— "	48 50	
51387—Ticket balance	5 00	
51473—Car service balance	61 45	
50868—Car repairs	32 89	
51046— "	18 49	
51334—Car service balance	102 35	
51803—Car repairs	8 86	
52423—Car service balance	316 80	
52537—Car repairs	28 84	
51946— "	30 33	
52522— "	43 81	
52608—Car service balance	341 45	
53237—Car repairs	39 56	
53727—Car service balance	329 70	
53763—Ticket balance	23 70	
52736—Claim No. 9502	2 29	
52860—Car repairs	62 88	
52984—Claim	13 99	
53110—Car repairs	48	
53550—Car service balance	486 90	
54127—Claims	21 37	
54165—Car repairs	38 46	
54619—Car service balance	193 50	
54723—Car repairs	30 34	
54298— "	43 44	
54374—Car service balance	2 70	
54490—Ticket balance	15 10	
54566—Car service balance	89 10	
54782—Car repairs	18 63	
54817—Claims No. 9873 and 9896	4 49	
54911—Claim No. 9773	1 96	
55277—Car repairs	45 19	
55331—Car service balance	34 15	
55581—Refund draft paid twice	1 70	
55192—Car repairs	83 02	
55624—Car service balance	27 20	
55885—Claim No. 10212	10 93	
56065—Car repairs	55 95	
		$2,770 57

H. J. PRICE, ENGINEERING DEPT., NORTH BAY, ONT.

50543—Donation, outfit lost Abitibi River	$40 00	
		$40 00

CHARLES PIERCE, TIMMINS, ONT.

50585—Claim No. 7987	$1 37	
53812— " 10010	3 16	
		$4 53

HERBERT PETERS, COBALT, ONT.

50587—Claim No. 7683	$6 48	
51869— " 9395	8 75	
		$15 23

PITTSBURG SPRING & STEEL CO., PITTSBURG, PA.

50679—Steel springs	$238 04	
53597— "	193 93	
55508— "	227 35	
55954— "	304 99	
		$964 31

J. H. Patterson, Toronto, Ont.

50713—Plans	$45 00	
50522— "	23 00	
51643—Services rendered	100 00	
51792— "	100 00	
53081— "	100 00	
		$368 00

S. Precious, Nahma, Ont.

50755—Part North ½, Lot 2, Con. 3, Tp. Lamarche, 4.14 acres....	$130 90	
		$130 90

Post Printing Co., Sarnia, Ont.

50997—Advertising . . .	$0 75	
		$0 75

A. J. Parr, G. F. & P. A., North Bay, Ont.

50931—Travelling expenses	$27 00	
50826— " "	17 50	
52110— " "	20 25	
53305— " "	14 60	
53250— " "	46 05	
54163— " "	45 70	
54016— " "	49 80	
55075— " "	11 60	
55004— " "	20 45	
55885— " "	16 70	
55888— " "	28 65	
51999— " "	35 50	
		$333 80

P. Picard, Lineman, North Bay, Ont.

50987—Travelling expenses	$7 65	
51114— " "	4 85	
52121— " "	3 70	
52206— " "	2 70	
53367— " "	4 60	
53252— " "	7 65	
54545— " "	2 85	
55155— " "	10 45	
55308— " "	1 65	
56301— " "	3 95	
56104— " "	9 40	
		$59 45

Pacific Fruit Express, San Francisco, Cal.

51357—Car service balance	$3 87	
51336— " " "	2 07	
52425— " " "	13 87	
51948—Car repairs	79	
52610—Car service balance	12 61	
53552— " " "	1 54	
54621— " " "	2 71	
54568— " " "	2 71	
56411— " " "	3 79	
		$43 96

PINTSCH COMPRESSING CO., NEW YORK, N.Y.

51475—Gas delivered, North Bay	$151 53	
51016— " "	186 58	
52123— " "	161 00	
53113— " "	144 32	
53667— " "	144 35	
53662— " "	121 74	
54725— " "	96 14	
54242— " "	80 26	
54492— " "	72 34	
55574— " "	106 50	
		$1,264 76

W. J. PARSONS, NORTH BAY, ONT.

56334—Pitcher	$0 60	
		$0 60

PACIFIC COAST PIPE CO., LIMITED, VANCOUVER, B.C.

56217—Iron pipe	$441 70	
		$441 70

T. PATON, NEW LISKEARD, ONT.

51497—Switch sets	$2 00	
		$2 00

PEERLESS CARBON & RIBBON MANUFACTURING CO., TORONTO, ONT.

51572—Carbon paper	$33 85	
52432— " "	89 95	
53587— " "	4 00	
53428— " "	30 00	
55511— " "	30 00	
56219— " "	2 50	
56340— " "	35 50	
		$225 80

F. C. PRESTON & CO., HAILEYBURY, ONT.

51537—Claim No. 7994	$9 75	
51756— " 9576	65	
55695— " 10065	3 11	
		$13 51

W. H. PETERSON, COCHRANE, ONT.

51607—Claim No. 8373	$3 51	
54072— " 9173	5 22	
		$8 73

PLEWS & LORIN, MONTREAL, QUE.

52305—Repairing voltmeter	$4 55	
		$4 55

JOSEPH PERAULT, NUSHKA, ONT.

52309—Wood supplied	$3 00	
56468—Switch sets	39 53	
		$42 53

GEO. E. PALMER, COLONIZATION AGENT, ENGLEHART, ONT.

51864—Travelling expenses	$17 10	
52108— " "	23 40	
53143— " "	12 40	
53118— " "	8 05	
54018— " "	4 50	
55157— " "	5 75	
		$71 20

H. Pilling, M. P. Dept., North Bay, Ont.

52254—Travelling expenses	$2 80	
55077— " "	2 00	
		$4 80

Paterson Manufacturing Co., Montreal, Que.

52817—Claim No. 9680	$44 83	
		$44 83

Porter & Co., Elk Lake, Ont.

53007—Claim No. 9634	$1 63	
		$1 63

Pipe & Presley, Cobalt, Ont.

53009—Claim No. 9702	$1 54	
		$1 54

W. H. Pennock & Sons, Thornloe, Ont.

53203—Lumber	$461 33	
54211— "	229 19	
54471— "	26 25	
		$716 77

Herman Peters, Kenabeek, Ont.

53251—Pulpwood	$52 15	
		$52 15

A. W. Pringle, New Liskeard, Ont.

53295—Screens	$4 50	
		$4 50

A. H. Porter, Elk Lake, Ont.

53401—Rental of Telephone Office	$30 00	
54642— " " "	30 00	
51242— " " "	10 00	
		$70 00

H. Proulx, Keys, Ont.

52778—Pulpwood	$42 48	
52882— "	11 52	
		$54 00

Queen's Hotel, Cochrane, Ont.

51459—Board—Engineering party	$8 00	
55504—Board—Engineering party	4 00	
		$12 00

Queen Victoria Memorial Hospital, North Bay, Ont.

50458—Donation	$100 00	
55729— "	100 00	
		$200 00

Quebec, Montreal & Southern Ry., New York, N.Y.

52427—Car service balance	$4 05	
52614— " " "	7 20	
53731— " " "	1 80	
54623— " " "	2 25	
54570— " " "	2 25	
55628— " " "	45	
56415— " " "	1 35	
		$19 35

J. F. Quick, Cobalt, Ont.

52819—Claim No. 9387	$8 00	
		$8 00

Quebec Ry., Light & Power Co., Quebec, Que.

55646—Ticket balance	$118 75	
		$118 75

Quincy Adams Lumber Co., Toronto, Ont.

55684—Amount collected for use of siding	$9 00	
55699—Claim No. 10267—Siding rebate	110 00	
		$119 00

Quebec Central Railway, Sherbrooke, Que.

56436—Car service balance	$10 35	
		$10 35

S. H. Ryan, Trainmaster, North Bay, Ont.

50935—Travelling expenses	$90 10	
50828— " "	20 30	
52001— " "	15 60	
52939— " "	19 10	
53254— " "	8 30	
54311— " "	12 30	
54248— " "	16 25	
55583— " "	19 90	
55260— " "	10 85	
55955— " "	20 55	
		$165 05

H. L. Rodgers, Mechanical Engineer, North Bay, Ont.

50935—Travelling expenses	$90 10	
55013— " "	8 88	
56068— " "	54 35	
		$153 33

Right of Way Mines, Limited, Ottawa, Ont.

53730—Settlement for alleged removal of rock	$600 00	
		$600 00

Royal Polishes Co., Montreal, Que.

52446—Polish	$8 10	
53438— "	12 15	
54479— "	12 15	
55519— "	12 15	
55514— "	8 10	
56231— "	12 15	
		$64 80

A. Rogers, Limited, Toronto, Ont.

50589—Claim No. 8969	$5 00	
		$5 00

M. Rothschild, Cochrane, Ont.

50487—Claim No. 9003	$0 68	
50638— " 8894, 9113	2 27	
51766— " 9114	7 30	
52986—Claims	21 04	
53927—Claims No. 9182 and 9919	2 79	
54855— " 10064	2 73	
55841— " 10044	4 00	
		$40 81

R. D. Robertson, Cobalt, Ont.

50489—Claim No. 7714	$12 60	
52627— " 9619	60	
		$13 20

Chas. D. Reckin & Sons, Cobalt, Ont.

50491—Claim No. 8502	$1 49	
51613— " 8731	3 54	
51764— " 7501	351 35	
52629— " 9461	2 00	
54913— " 10101	2 32	
56138— " 10331	1 89	
		$362 59

Rous & Mann, Limited, Toronto, Ont.

50529—Alteration to time tables	$15 00	
50963—Time table covers	170 00	
51174—Folders	20 00	
51977—Time table covers	70 00	
54975—Folders	41 00	
		$316 00

Mrs. A. Ross, Lindsay, Ont.

50591—Claim No. 9179	$8 00	
		$8 00

Railway Mechanical Computing Table, Lakewood, Ont.

51243—Computing tables	$1 50	
		$1 50

Rice Lewis & Son, Limited, Toronto, Ont.

51582—Wick trimmers	$5 58	
51731—Scissors	1 00	
52321—Glass cutters	10 75	
53436—Hardware	4 99	
54475— "	2 50	
54188— "	15 55	
55521— "	55	
55512— "	4 35	
55979— "	6 31	
56233— "	1 06	
56348— "	27	
		$52 91

P. Rachleau, Gatineau Point, Que.

53740—Wages assigned by J. Wilson	$17 50	
53744—Unclaimed wages	8 00	
		$25 50

J. Rowlandson, Iroquois Falls, Ont.

52144—Refund, deposit on siding	$49 03	
		$49 03

F. Ricciuto, North Bay, Ont.

53860—Keys	$1 40	
		$1 40

Railway & Locomotive Engineering, New York, N. Y.

54246—Subscription	$4 00	
55350— "	4 00	
		$8 00

RAILWAY SIGNAL ASSOCIATION, BETHLEHEM, PA.

54690—Annual	$8 75	
		$8 75

ROMAN CATHOLIC DIOCESE OF TEMISKAMING, HAILEYBURY, ONT.

55720—Commission on tickets	$347 35	
		$347 35

ROBERTS & SCHAEFER CO., CHICAGO, ILL.

55830—Equipment for coaling plant	$1,379 00	
56092— " " "	394 00	
		$1,773 00

RAIL JOINT CO. OF CANADA, LTD., NEW YORK, N. Y.

56350—Rail joints	$5,864 60	
		$5,864 60

RAND AVERY SUPPLY CO., BOSTON, MASS.

56346—Ticket punches	$30 00	
		$30 00

T. ROSS, MASTER MECHANIC, NORTH BAY, ONT.

50705—Travelling expenses	$6 75	
54704— " "	7 25	
		$14 00

RAILWAY AGE GAZETTE, NEW YORK, N.Y.

51477—Subscription	$8 00	
50794— "	6 00	
51729— "	6 00	
53049— "	6 00	
53984— "	6 00	
54042— "	6 00	
		$38 00

RICHARDSON, BOND & WRIGHT, LTD., OWEN SOUND, ONT.

51580—Printed forms	$100 45	
52319— " "	90 25	
52442— " "	62 95	
53601— " "	114 30	
53440— " "	58 70	
54483— " "	36 40	
54190— " "	112 50	
54498— " "	66 65	
55515— " "	109 97	
55516— " "	98 40	
56235— " "	34 05	
56352— " "	132 35	
		$1,016 97

A. C. RORABECK, NORTH BAY, ONT.

51481—Acid	$7 50	
52436—Potassium	5 00	
56229—Ammonia	4 50	
		$17 00

ROCK ISLAND EMPLOYEES MAGAZINE, CHICAGO, ILL.

51483—Subscription	$1 50	
		$1 50

RATCLIFFE PAPER CO., LTD., TORONTO, ONT.

51244—Twine	$8 17	
52018— "	20 05	
55517— "	8 00	
55913— "	7 42	
		$43 64

REMINGTON TYPEWRITER CO., LTD., TORONTO, ONT.

50681—Carbon paper	$20 00	
50498—Inspection and repairs	4 00	
50532—Typewriter (less allowance on old machine)	34 30	
51733—Carbon paper	7 00	
51975—Carbon paper	3 00	
52125—Inspection	1 00	
51824—Carbon paper	2 00	
52186—Inspection	1 00	
52935—Desk clamps	1 40	
53297—Inspection	1 00	
53981—Carbon paper and inspection	7 00	
54313—Carbon paper	6 00	
54644—Carbon paper and inspection	13 00	
55195—Repairing typewriter	15 00	
55006—Carbon paper	4 00	
56001—Carbon paper	8 25	
		$127 95

J. W. RICHARDSON, NORTH BAY, ONT.

50731—Heater	$10 86	
51479—Sprayer	50	
51935—Snow shoes	5 82	
52075—Turpentine	8 73	
52317—Brackets	2 40	
54109—Mirrors	3 49	
55091—Hinges	1 16	
54882—Hardware	73	
55973—Hardware	3 49	
51904—Snowshoes	8 00	
53432—Thermometer	25	
		$45 43

JAMES ROBERTSON CO., LTD., MONTREAL, QUE.

51405—Steel plates	$121 47	
51584— "	137 71	
52315— "	11 16	
52438— "	24 76	
52887— "	20 51	
53077— "	37 60	
53315— "	88	
52788— "	40 41	
54481— "	65 03	
55207— "	32 10	
55770—Sheet steel	6 76	
55902—Steel plates	261 41	
53430—Steel	5 90	
55721—Steel plates	12 51	
55747—Wash basins, etc.	14 05	
		$792 26

RAILWAY MAIL CLERKS ASSOCIATION, TORONTO, ONT.

51082—Advertising	$15 00	
		$15 00

W. C. RYAN, NORTH BAY, ONT.

51561—Unclaimed wages paid	$13 96	
		$13 96

W. H. Rice, Haileybury, Ont.

51609—Claim No. 8770	$1 75	
		$1 75

Reamsbottom & Edwards, South Porcupine, Ont.

51611—Claim No. 7803	$9 04	
51680— " 8924	47 94	
52740— " 9194	5 98	
		$62 96

Roberts & Son, Toronto, Ont.

51689—Frames	$24 50	
		$24 50

Railway Equipment & Publishing Co., New York, N.Y.

51933—Subscription	$96 00	
51996—Subscription	10 00	
		$106 00

Russia Cement Co., Gloucester, Mass.

52079—Liquid glue	$14 11	
56032— "	14 11	
52936— "	21 17	
		$49 39

Geo. W. Reed & Co., Ltd., Montreal, Que.

51758—Claim No. 9501	$3 00	
		$3 00

I. Rice, Iroquois Falls, Ont.

51760—Claim No. 9569	$0 95	
53974— " 9708	4 25	
55839— " 10044	5 82	
54131— " 9674	1 23	
		$12 25

Richmond, Fredericksburg & Potomac Railway, Richmond, Va.

51359—Car service balance	$3 15	
51389—Ticket balance	3 05	
		$6 20

Rutland Railroad Co., New York, N.Y.

51378—Ticket balance	$4 87	
54653—Ticket balance	18 16	
54308—Car repairs	4 05	
55042—Car repairs	4 85	
55630—Car service balance	3 15	
56067—Car repairs	2 16	
		$37 24

Richards-Wilcox Canadian Co., Ltd., London, Ont.

54972—Hangers	$6 19	
		$6 19

Thomas Robertson & Co., Ltd., Toronto, Ont.

51665—Basins	$5 63	
		$5 63

WILLIAM REMUS, ENGLEHART, ONT.

51822—Donation account alleged loss, buildings and contents by fire	$25 00	
		$25 00

H. ROUSSON, COCHBANE, ONT.

52557—Ties	$29 76	
52690—Ties	16 80	
		$46 56

H. ROSE, HOMER SIDING, ONT.

52567—Ties	$13 20	
52690—Ties	8 00	
		$21 20

A. ROESER, PORCUPINE, ONT.

52557—Ties	$66 40	
		$66 40

ROSS & CO., COBALT, ONT.

51762—Claim No. 7645	$11 35	
		$11 35

ROOFERS SUPPLY CO., LTD., TORONTO, ONT.

53015—Claim No. 9140	$3 71	
		$3 71

A. ROINE, COBALT, ONT.

51768—Claim No. 8970	$5 00	
		$5 00

CHAS. ROBINSON, CANE, ONT.

52857—Pulpwood	$36 58	
52891—Pulpwood	9 14	
		$45 72

C. RIDDLER, SPECIAL OFFICER, NORTH BAY, ONT.

52112—Travelling expenses	$7 55	
52142—Electrical supplies	2 00	
52937—Travelling expenses	13 95	
53307—Travelling expenses	13 40	
53120—Expenses	11 00	
		$47 90

WM. RENNIE CO., LTD., TORONTO, ONT.

52745—Seeds	$93 70	
53434—Seed potatoes	1 80	
		$95 50

J. T. RYERSON & SON, CHICAGO, ILL.

53599—Flue cleaner	$1 26	
		$1 26

J. P. RYAN, HAILEYBURY, ONT.

52631—Claim No. 9570	$5 30	
		$5 30

G. H. Rochester, Haileybury, Ont.

52821—Claim No. 9695	$11 00	$11 00

John Roulston, Thornloe, Ont.

52988—Claim No. 9688	$2 64	$2 64

J. Raycroft & Co., Charlton, Ont.

52823—Claim No. 9447	$26 76	$26 76

G. M. Rymal, Hamilton, Ont.

52990—Claim No. 9723	$3 74	$3 74

F. Roberts, Haileybury, Ont.

53011—Claim No. 9476	$17 02	$17 02

W. J. Ramsay, New Liskeard, Ont.

53879—Award Workmen's Compensation Board, *re* alleged injuries	$8 89	$8 89

J. H. Russell, Anthony, Que.

53929—Claim No. 9948	$0 59	$0 59

Rand McNally & Co., Chicago, Ill.

54477—Atlas	$15 00	$15 00

T. Reda, Cass, West Va.

53013—Claim No. 8812	$4 05	$4 05

J. Stone & Co., Montreal, Que.

51245—Repair parts	$7 50	
52297—Repair parts	202 34	
55545—Electrical material	63 52	
54148—Repair parts	120 68	
53442— "	95 99	
54194— "	31 96	
56249—Belting	53 90	
56198—Analysis of water	7 50	
		$583 39

Sheet Metal Products of Canada, Toronto, Ont.

51698—Plate	$11 27
52024—Pails, etc.	4 78
52070—Cans, etc.	29 64
53319—Galvanized iron	16 98
52938—Iron	10 56
53172—Ironware	12 92
54199—Tinware, etc.	64 28
54495—Fire pails	3 60

SHEET METAL PRODUCTS OF CANADA, TORONTO, ONT.—*Continued.*

54358—Dust pans	$4,09	
55095—Pails	73 34	
55549—Pails	17 35	
54978—Stove pipes	7 06	
55330—Pails	63 09	
55522—Torches	87	
55915—Galvanized iron	31 55	
50735—Iron	18 50	
51415—Oil cans	33 60	
50736—Coal hods	9 15	
55910—Cups, elbows, etc.	14 99	
51144—Iron	23 28	
51596—Elbows	2 43	
51667—Galvanized iron	20 13	
55975—Stove pipes, etc.	14 86	
55772—Iron	12 74	
56034—Plate	3 04	
		$504 10

H. W. SMITH, PORQUIS JCT., ONT.

52557—Ties	$23 40	
52557— "	9 63	
52690— "	7 20	
52690— "	7 80	
		$48 03

SOUTHAM PRESS, LIMITED, TORONTO, ONT.

53457—Tickets	$127 65	
53613—Tickets	19 35	
53200—Tariffs	23 75	
53456—Forms and tickets	23 05	
54167—Tariffs and circulars	10 75	
54169—Tariffs	46 60	
54315—Coupons and tickets	19 55	
54491—Tickets	128 50	
53864—Tariffs	46 60	
54252—Supplements	13 50	
54392—Wall timetables	16 00	
54646—Tickets and timetables	132 25	
54648—Folders	46 45	
54971—Tickets	55 00	
54973—Forms	5 00	
55133—Pouch checks	19 50	
54932—Tariffs	45 40	
54934—Tickets, etc.	208 10	
55352—Tariffs, etc.	24 45	
55686—Tariffs, etc.	26 50	
56005—Tickets	212 90	
56038— "	8 00	
56356— "	58 05	
50967—Folders	74 25	
50969—Forms	9 50	
51407—Tickets and passes	178 35	
51176—Tariffs	13 25	
51246—Tariffs	234 75	
51594—Passes	43 75	
52329—Tickets	102 50	
53405—Tariffs	99 75	
53407—Tariffs	25 50	
50800—Timetables	109 00	
56486—Supplements to timetables	5 50	
		$2,213 00

STEEL EQUIPMENT CO., LTD., OTTAWA, ONT.

56251—Transfer cases	$12 00	
51417— "	18 75	
51590— "	24 00	
52450— "	24 00	
53605— "	33 00	
53452— "	12 00	
54500— "	6 75	
55529— "	25 50	
56362— "	12 00	
		$168 00

F. A. SAUNDERS, NORTH BAY, ONT.

55354—Award Workmen's Compensation Board, *re* alleged injuries	$22 61	
		$22 61

SMITHS FALLS MALLEABLE CASTING CO., SMITHS FALLS, ONT.

51421—Castings	$33 64	
51588— "	53 82	
52327— "	4 50	
52456— "	10 62	
53603— "	20 13	
53444— "	13 95	
54202— "	10 85	
56364— "	11 61	
		$159 12

J. B. SMITH & SONS, LTD., TORONTO, ONT.

54209—Tank tubs	$655 55	
55531—Lumber	75 45	
		$731 00

E. SHIELDS, PORQUIS JCT., ONT.

54279—Clearing station ground, Porquis Jct.	$13 80	
		$13 80

A. SHAW, HAILEYBURY, ONT.

54731—Papering	$6 50	
		$6 50

H. SALE, MOTIVE POWER DEPT., NORTH BAY, ONT.

56202—Travelling expenses	$3 60	
		$3 60

SCHUMACHER GOLD MINES CO., LTD., SCHUMACHER, ONT.

51770—Claim No. 9155	$3 50	
		$3 50

ECONOMIST, SHELBOURNE, ONT.

53205—Advertising	$1 00	
		$1 00

SHERBURN & CO., BOSTON, MASS.

52188—Signal cocks	$5 00	
		$5 00

W. L. SPENCER, EARLTON, ONT.

52715—Claim No. 9558	$2 78	
		$2 78

SHEA, SMITH & CO., CHICAGO, ILL.

52446—Memo books	$2 19	
		$2 19

SAMSON CORDAGE WORKS, BOSTON, MASS.

51600—Signal cord	$20 71	
56241—Signal cord	22 55	
		$43 26

SIMMONS PRINTING CO., OTTAWA, ONT.

52454—Binders	$5 25	
54729—Printing	20 00	
		$25 25

S. SPIERS, MILBERTA, ONT.

51619—Claim No. 9322	$0 40	
		$0 40

STEELE-BRIGGS SEED CO., LTD., TORONTO, ONT.

52452—Seeds	$7 00	
53446— "	4 00	
54487— "	3 00	
56237— "	7 77	
		$21 77

JULIAN SALE LEATHER GOODS CO., LTD., TORONTO, ONT.

55104—Claim No. 10207	$4 25	
		$4 25

T. W. SQUIRE, TORONTO, ONT.

51735—Supplies for private cars	$34 31	
53115— " "	29 81	
53202— " "	31 55	
54317— " "	27 35	
54504— " "	25 56	
54929— " "	28 12	
55771— " "	28 14	
		$204 84

SPOKANE & INLAND EMPIRE RLD., PORTLAND, ORE.

54312—Car repairs	$0 42	
		$0 42

WM. STONE & SONS, LTD., WOODSTOCK, ONT.

54852—Claim No. 10108	$0 90	
		$0 90

WM. SIMPSON, ELK LAKE, ONT.

50698—Rental of telephone office	$10 00	
		$10 00

JAS. SMART MFG. CO., LTD., BROCKVILLE, ONT.

50734—Hammers	$7 07	
52749—Pumps	34 88	
53168—Wrenches	4 57	
53448—Plate	5 50	
55543—Hammers	3 40	
54976—Hammers	3 73	
		$59 15

STEPHENSON & SON, NEW LISKEARD, ONT.

51998—Advertising	$4 20	
55585—Advertising	3 60	
		$7 80

SHURLY-DIETRICH CO., LTD., GALT, ONT.

55533—Bandsaw	$1 92	
		$1 92

J. A. SIMMERS, LTD., TORONTO, ONT.

55535—Lawn mower	$41 10	
		$41 10

CECIL R. SCOTT, ENGINEERING DEPT., NORTH BAY, ONT.

54952—Donation *re* loss outfit by fire	$89 10	
		$89 10

CHAS. P. SCOTT, NELLIE LAKE, ONT.

54980—Donation *re* cow alleged killed	$40 00	
		$40 00

SHERWOOD & SHERWOOD, SUDBURY, ONT.

51066—Contract, stations and section house	$7,282 20	
51829—Refund deposit on contract	2,775 00	
52131—Building material	241 28	
52660—Refund of B.C. 23670, cancelled	5 45	
52710—Refund of B.C. 22673, cancelled	67	
		$10,304 60

W. SWITZER, RELIEVING SUPERVISOR, LATCHFORD, ONT.

51281—Travelling expenses	$14 25	
51198— "	6 90	
54728— "	4 30	
55262— "	2 70	
		$28 15

SAN PEDRO, LOS ANGELES & SALT LAKE RY., LOS ANGELES, CAL.

53761—Ticket balance	$16 18	
51350—Car service balance	5 85	
		$22 03

SOUTHERN RY. CO. IN MISSISSIPPI, MOBILE, ALA.

50865—Car repairs	$0 89	
54087— "	1 40	
55044— "	52	
		$2 81

ST. LOUIS & SAN FRANCISCO RY., ST. LOUIS, MO.

50867—Car repairs	$1 87	
51340—Car service balance	4 90	
52530—Car repairs	8 16	
53241— "	4 70	
53614— "	110 26	
54318— "	6 58	
54786— "	1 18	
55285— "	4 66	
55218— "	48 33	
		$190 64

SEABOARD AIR LINE, PORTSMOUTH, VA.

50964—Car repairs	$0 12	
52868— "	10 26	
54089— "	6 71	
54310— "	8 56	
54788— "	5 71	
56417— "	2 25	
		$33 61

G. M. SIMPSON, LINEMAN, ENGLEHART, ONT.

50937—Travelling expenses	$3 80	
51118— "	6 95	
52127— "	7 50	
52256— "	5 90	
53373— "	4 50	
53256— "	14 00	
54547— "	11 55	
54506— "	16 30	
55131— "	21 55	
55891— "	21 00	
56305— "	11 60	
56106— "	8 85	
		$133 50

B. F. SMITH, ELECTRICIAN, NORTH BAY, ONT.

51277—Travelling expenses	$15 00	
51200— "	15 00	
51864— "	27 50	
52208— "	1 50	
		$59 00

CHAS. STAAF, TIMMINS, ONT.

55938—Claim No. 10141	$11 75	
		$11 75

J. H. SCHMALLBACK, RELIEVING AGT., NORTH BAY, ONT.

51279—Travelling expenses	$14 00	
53664— "	12 00	
54250— "	14 00	
		$40 00

A. J. B. SAUMIER, SWASTIKA, ONT.

51617—Claim No. 9185	$1 12	
54859—Claim No. 9191	5 15	
		$6 27

SOUTHERN PACIFIC CO., PACIFIC SYSTEM, SAN FRANCISCO, CAL.

50617—Ticket balance	$0 25	
51361—Car service balance	3 60	
51048—Car repairs	1 30	
51344—Car service balance	20 25	
52433—Car service balance	14 40	
52465—Ticket balance	3 13	
52541—Car repairs	1 56	
54085—Car repairs	2 31	
54629—Car service balance	3 10	
55046—Car repairs	57	
		$50 47

STATION LIST PUBLISHING CO., ST. LOUIS, MO.

50965—List of Stations	$1 67	
53403— "	1 53	
53862— "	1 56	
51248— "	2 90	
54650— "	2 90	
55603— "	1 55	
		$12 11

SWIFT REFRIGERATOR LINE, CHICAGO, ILL.

51338—Car service balance	$22 31	
52429— " "	16 48	
52616— " "	8 92	
53733— " "	2 35	
54625— " "	4 69	
54572— " "	8 95	
55335— " "	6 33	
55632— " "	6 89	
		$76 92

SWEDISH STEEL & IMPORTING CO., LTD., MONTREAL, QUE.

51409—Steel	$14 05	
51604— "	18 20	
52444— "	31 05	
54200— "	13 13	
		$76 43

THE SIGNAL, GODERICH, ONT.

51250—Advertising	$1 50	
		$1 50

STEEL CO. OF CANADA, LTD., MONTREAL, QUE.

50997—Screws	$1 39
50999—Bolts	35 01
51423—Bolts	85 47
51425—Screws	32 64
50738—Bolts and nuts	90 90
50740— "	21 36
51142— "	75 22
51606— "	279 86
51671—Nuts	68 94
52323—Steel bars	149 45
51694—Bolts	330 62
51696—Washers	17 44
52020—Bolts and screws	38 54
52066—Bolts and screws	195 05
52460—Spikes	735 52
52747—Tacks	5 73
53079—Rivets and bolts	332 84
53321—Washers	17 67
53323—Screws	44 16
53617—Screws	33 49
52940—Rivets	15 18
53166—Nuts and bolts	206 36
53458—Track bolts	719 98
53875—Screws and nails	32 22
54201—Rivets, bolts, etc.	156 52
54493—Iron and steel	33 47
53764—Bolts	131 72
53894—Bolts	134 76
54192—Iron	196 56
54360—Steel	174 13
54927—Steel	104 13

STEEL CO. OF CANADA, LTD., MONTREAL, QUE.—*Continued.*

55093—Bolts and screws	$205 94	
55209—Iron and steel	98 53	
55551—Iron	7 58	
54884—Screws	3 83	
54974—Bolts	132 63	
55332—Bolts	19 65	
55526—Iron	85 96	
55917—Screws and rivets	37 76	
55977—Bolts, iron, steel, etc.	49 54	
56245—Steel	16 62	
55774—Bolts, nuts, etc.	204 06	
55904—Bolts	43 26	
55906—Spikes	19 64	
56036—Bolts	19 10	
56354—Bolts	146 15	
		$5,586 58

A. STEVENS, TEMAGAMI, ONT.

50493—Claim No. 8687	$2 58	
		$2 58

SPANISH RIVER PULP & PAPER MILLS CO., SAULT STE. MARIE, ONT.

50593—Claims Nos. 9207, 9219 and 9220, siding rebates	$26 00	
51615—Claim No. 9368, siding rebate	28 00	
52992—Claims	16 00	
		$70 00

LAURA SECORD CANDY CO., TORONTO, ONT.

50715—Supplies for private car	$1 00	
		$1 00

J. H. STILL MFG. CO., LTD., ST. THOMAS, ONT.

50733—Handles for peavies	$4 98	
51411—Axe, file and pick handles	13 31	
50742—Peavy handles and flag staffs	73 75	
51598—Axe, sledge and pick handles	45 04	
54022—Axe, sledge and hammer handles	30 31	
52068—Handcar handles	3 43	
53317—Axe, adze, and peavy handles	62 68	
53611—Flagstaffs	2 10	
53170—Peavy and axe handles	42 96	
53892—Broom and pick handles	29 48	
53035—Axe and peavy handles	63 97	
55328—Sledge, hammer and axe handles	27 96	
55528—Axe and peavy handles	2 10	
		$402 07

W. SWEETMAN, SPECIAL OFFICER, NORTH BAY, ONT.

50707—Travelling expenses	$28 50	
		$28 50

MRS. A. SAUVE, TEMAGAMI, ONT.

50647—Claim No. 9115	$1 88	
		$1 88

STANDARD IRON CO., LTD., MONTREAL, QUE.

50645—Claim No. 8633	$1 20	
		$1 20

SANTA FE REFRIGERATOR DISPATCH CO., TOPEKA, KAN.

51342—Car service balance	$5 34	
52431— " "	3 87	
53735— " "	2 35	
53556— " "	10 78	
54627— " "	1 18	
55333— " "	3 87	
55634— " "	3 79	
		$31 18

ST. JOHNS RIVER TERMINAL CO., WASHINGTON, D.C.

51346—Car service balance	$0 45	
		$0 45

SOUTHERN CLASSIFICATION COMMITTEE, ATLANTA, GA.

50798—Classifications	$0 33	
54930— "	2 34	
		$2 67

ST. LOUIS SOUTHWESTERN RAILWAY OF TEXAS, TYLER, TEX.

51348—Car service balance	$9 90	
52618— " "	2 70	
54574— " "	90	
		$13 50

ST. LOUIS & SOUTHWESTERN RAILWAY CO., ST. LOUIS, MO.

55281—Car repairs	$4 72	
56069— "	1 32	
		$6 04

SHELDONS, LTD., GALT, ONT.

51592—Steam trap	$6 19	
51674—Blower	201 88	
		$208 07

E. E. SIEBER, NORTH BAY, ONT.

50796—Photographic supplies	$4 25	
		$4 25

T. M. STEVENSON, TORONTO, ONT.

51018—Almanac	$1 00	
		$1 00

SOUTHERN RAILWAY CO., WASHINGTON, D.C.

50863—Car repairs	$66 71	
50906— "	17 78	
51950— "	2 20	
53239— "	18 07	
54091— "	22 06	
54727— "	1 81	
55279— "	12 12	
55216— "	1 80	
51805— "	2 35	
54320— "	6 30	
		$151 20

SCYTHES CO., LTD., TORONTO, ONT.

51669—Duck	$109 69	
53609—Waste	197 85	
53210— "	401 38	
54485— "	101 96	
53766—Duck	62 97	
54198—Waste	199 91	
55523— "	103 47	
55518— "	306 25	
55908—Duck	70 68	
56170—Waste	159 48	
		$1,713 64

SAFETY CAR HEATING & LIGHTING CO., NEW YORK, N.Y.

51419—Supplies	$92 58	
51586—Mantles	84 30	
52325— "	35 80	
52448— "	29 56	
53615— "	126 54	
53462—Repair parts	177 72	
54497— "	141 60	
54196—Lamps and mantles	104 80	
55547—Repair parts	126 94	
55524—Brackets	101 15	
56239—Lamps and mantles	41 49	
56358—Repair parts and lights complete	2,145 55	
		$3,208 03

CHAS. A. SEE, SOUTH PORCUPINE, ONT.

50640—Claim No. 8918	$5 00	
		$5 00

SKY BROS., SOUTH PORCUPINE, ONT.

50642—Claim No. 8936	$7 50	
54133—Claim No. 9870	20 49	
		$27 99

F. G. W. SMITH, CANE P.O., ONT.

52920—Pulpwood	$52 56	
		$52 56

A. E. SARGEANT, SCHUMACHER, ONT.

52994—Claim No. 9154	$15 00	
		$15 00

R. SWAN, SPECIAL OFFICER, NORTH BAY, ONT.

53258—Travelling expenses	$30 50	
54237— " "	27 25	
54508— " "	37 70	
55619— " "	34 45	
55714— " "	39 75	
55957— " "	31 25	
50678— " "	29 25	
51186— " "	21 50	
52005— " "	21 00	
52072— " "	29 25	
53309— " "	30 00	
		$331 90

LEVI SOPER, ENGLEHART, ONT.

50644—Claim No. 8919	$0 77	
		$0 77

J. H. Shillington, Thornloe, Ont.

50744—Donation *re* lumber destroyed by fire	$432 35	
		$432 35

Standard Chemical Iron & Lumber Co., Ltd., Toronto, Ont.

53450—Shellac	$15 07	
55520— "	16 73	
51413— "	33 25	
		$65 05

Sargeant Co., Chicago, Ill.

53454—Water glass protectors	$24 00	
		$24 00

Wm. Scully, Montreal, Que.

53460—Uniform caps and buttons	$65 51	
56360—Uniforms and caps	82 41	
		$147 92

St. Louis, Brownsville & Mexico Railway, Kingsville, Tex.

52435—Car service balance	$10 35	
52620— " "	4 95	
50861—Car repairs	1 20	
54570—Car service balance	6 30	
		$22 80

W. H. Small, Cane, Ont.

52857—Pulpwood	$39 10	
52891— "	9 78	
		$48 88

Sandy Valley & Elkhorn Railway, Baltimore, Md.

52437—Car service balance	$1 80	
52622— " "	13 05	
53737— " "	20 70	
53558— " "	19 35	
54631— " "	16 65	
		$71 55

San Antonio & Aransas Pass Railway Co., San Antonio, Tex.

52251—Car repairs	$0 87	
54306— "	2 77	
		$3 64

Smart-Turner Machine Co., Ltd., Hamilton, Ont.

52458—Repair parts	$15 20	
54489— "	62 00	
		$77 20

Star Steam Laundry, Vancouver, B.C.

55773—Laundry work, private car	$5 05	
		$5 05

Star Grocery, North Bay, Ont.

55775—Commissary Supplies	$26 79	
		$26 79

SULLIVAN & SHILLINGTON, COBALT, ONT.

52637—Claim No. 9649	$4 09	
		$4 09

I. A. SOLOMON, HAILEYBURY, ONT.

52825—Claim No. 9543	$4 80	
		$4 80

T. G. SHARP, HAILEYBURY, ONT.

52635—Claim No. 9227	$15 78	
		$15 78

N. J. SULLIVAN, LINEMAN, ELK LAKE, ONT.

50708—Travelling expenses	$16 60	
51116— " "	2 95	
52129— " "	8 25	
52258— " "	11 60	
53371— " "	1 65	
54239— " "	3 30	
54052— " "	11 95	
54510— " "	14 50	
55310— " "	28 05	
56393— " "	26 00	
56108— " "	3 70	
		$128 55

R. H. STEWART, TORONTO, ONT.

53051—Supplies for private car	$33 55	
		$33 55

A. SINSER, COCHRANE, ONT.

53117—Supplies for private cars	$6 15	
		$6 15

M. J. SKYOUSBYE, SESEKINIKA, ONT.

53251—Pulpwood	$44 26	
52882— "	11 06	
		$55 32

STEVENSON BOILER & ENGINE WORKS, PETROLIA, ONT.

53607—Bottles for fire extinguishers	$12 00	
56247— " "	12 00	
		$24 00

JOSEPH SIMS, COBALT, ONT.

53994—Claim No. 8772	$8 42	
		$8 42

STATEN RAPID TRANSIT RAILWAY, NEW YORK, N.Y.

52866—Car repairs	$0 65	
54314— "	42	
		$1 07

F. G. SNETSINGER, NEW LISKEARD, ONT.

54857—Claim 10019	$1 59	
		$1 59

A. Segouin, Nushka, Ont.

53857—Claim No. 9905	$12 00	
		$12 00

St. George New Ontario Water & Wine Co., Cobalt, Ont.

53931—Claim No. 9939	$17 95	
		$17 95

H. Sparling, Kenabeek, Ont.

54775—Ties	$37 85	
54775— "	57 35	
		$95 20

Standard Planing Mills, Ltd., North Bay.

54502—Lumber	$210 00	
55517—Flooring	21 00	
56243—Sash	50 80	
56488 - "	74 30	
		$356 10

Simonds Canada Saw Co., Montreal, Que.

55525 Rubber for bandsaw wheel	$4 00	
		$4 00

Ernest Strand, Bourkes, Ont.

54600 Settlement *re* alleged injuries received	$15 67	
		$15 67

Sutcliffe & Neelands, New Liskeard, Ont.

54692—Services rendered	$10 75	
		$10 75

Spokane, Portland & Seattle Railway Co., Portland, Ore.

55283—Car repairs	$3 60	
		$3 60

Annie Stephenson, New Liskeard, Ont.

53770—Claim No. 9603	$1 11	
		$1 11

Stoddart Bros., North Bay, Ont.

53865—Supplies for private car	$16 06	
		$16 06

J. T. Shane, Relieving Agent, North Bay, Ont.

53866—Travelling expenses	$13 00	
		$13 00

T. M. Sale, Stores Department, North Bay, Ont.

52003—Travelling expenses	$16 80	
53260— " "	8 20	
54537— " "	20 60	
54458— " "	16 35	
55159— " "	12 15	
		$74 10

TREASURER OF ONTARIO, TORONTO, ONT.

51485—Copying report	$7 50	
51737—Fire ranging	5,000 00	
53082— "	5,000 00	
55356—Paper for Annual Report	75 26	
56349—Paper for Mining Report	39 98	
55790—Proceeds from operation	225,000 00	
		$235,122 74

T. & N. O. RAILWAY, AGENT, PORQUIS JUNCTION, ONT.

51881—Claim No. 9307—Outstanding account, shortage	$2 44	
52669—Claim No. 9542—Outstanding account, shipment refused.	5 37	
54823—Claim No. 4736—Outstanding account, overcharge	6 59	
55851—Claim No. 9647—Outstanding account, shortage	18 01	
		$32 41

T. & N. O. RAILWAY, AGENT, LATCHFORD, ONT.

51883—Claim No. 7136—Overcharge freight	$5 39	
		$5 39

T. & N. O. RAILWAY, AGENT, SCHUMACHER, ONT.

53945—Claim No. 9960—Outstanding account, error	$28 51	
		$28 51

T. & N. O. RAILWAY, AGENT, HEASLIP, ONT.

52661—Claim No. 9318—Outstanding account, undercharge	$48 10	
		$48 10

T. & N. O. RAILWAY, AGENT, CHARLTON, ONT.

52837—Claim No. 8966—Outstanding account, overcharge	$1 00	
53670—Repairing copying press	50	
		$1 50

T. & N. O. RAILWAY, AGENT, HAILEYBURY, ONT.

50976—Claims 8149, 9130, 8876, 8704—Shipments short and damaged	$4 37	
51873—Claim No. 8008—Outstanding account, shortage	1 75	
52663—Claim No. 9648—Outstanding account, shortage	16 13	
53004—Claims Nos. 9714, 9840—Outstanding account, shortage	12 92	
53978—Claim No. 10022—Outstanding account, shortage	5 32	
55552—Cleaning car, "Sir James"	75	
55703—Claim No. 10168—Outstanding account, shortage	64	
		$41 88

T. & N. O. RAILWAY, AGENT, ELK LAKE, ONT.

52659—Claim No. 9608—Outstanding account, error	$8 00	
		$8 00

T. & N. O. RAILWAY, AGENT, SWASTIKA, ONT.

53941—Claim No. 9808—Outstanding account, shipment short	$0 95	
		$0 95

T. & N. O. RAILWAY, AGENT, IROQUOIS FALLS, ONT.

53665—Claim No. 9612—Overcharge account, demurrage charges	$5 00	
53937—Claim No. 9749—Overcharge account, demurrage charges	9 00	
		$14 00

T. & N. O. Railway, Agent, New Liskeard, Ont.

52669—Claim No. 7808—Outstanding account, shipment short	$0 92	
55578—Auto trip account, W. H. Hearst	7 00	
55836—Supplies for private car	7 30	
50599—Claim No. 8844—Outstanding account, demurrage.....	6 00	
		$21 22

T. & N. O. Railway, Agent, Tomiko, Ont.

52669—Claim No. 9542—Outstanding account, shipment refused..	$0 69	
		$0 69

T. & N. O. Railway, Agent, Widdifield, Ont.

52675—Claim No. 9472—Outstanding account, demurrage	$12 00	
		$12 00

T. & N. O. Railway, Agent, Earlton, Ont.

53002—Claim No. 9711—Outstanding account, shipment short ..	$0 70	
		$0 70

T. & N. O. Railway, Agent, Diver, Ont.

52943—Supplies for private car	$5 60	
52042—Provisions for car, "Sir James"	4 48	
		$10 08

T. & N. O. Railway, Agent, Temagami, Ont.

54825—Claim No. 9967—Outstanding shipment, unclaimed	$4 57	
56029—Telegraph tolls	1 94	
		$6 51

T. & N. O. Railway, Agent, Englehart, Ont.

51491—Bags	$0 50	
51941—Cockroach exterminator	2 00	
52657—Claim No. 8643—Cost of unpacking and repacking shipment of crockery	2 90	
54656—Washing towels	40	
54917—Claim No. 10014—Outstanding account, damage.....	35	
		$6 15

T. & N. O. Railway, Agent, Timmins, Ont.

51493—Paint	$2 00	
52701—Claim No. 9700—Outstanding account, shipment short...	4 64	
52841—Claim No. 9650—Outstanding account, error	1 14	
53980—Claim No. 9163—Outstanding account, shortage	91	
53990—Claim No. 8772—Outstanding account, excess weight	11 93	
54921—Claim No. 10138—Outstanding account, demurrage assessed in error	3 00	
56154—Claim No. 10423—Outstanding account, undercharge.....	38 97	
		$62 59

T. & N. O. Railway, Agent, Cochrane, Ont.

50654—Claim No. 9126—Outstanding account, shortage	$15 00	
50756—Repairs to truck	75	
52655—Claim No. 8958—Outstanding account, overcharge.....	3 00	
52681a—Claim No. 9557—Outstanding account, damage	99	
52835—Claim No. 8941—Undercharge freight		
Claims Nos. 9602 and 9661—Outstanding account, shipment sent to lock-up	2 84	
53023—Claim No. 9737—Outstanding account, damage	1 77	

T. & N. O. Railway, Agent, Cochrane, Ont.—*Continued.*

52744—Claim No. 8813—Outstanding account, damage	$7 35	
53000—Claim No. 9838—Outstanding account, overcharge	10 00	
53976—Claim No. 10039—Outstanding account, shortage	59 50	
55701—Claim No. 9617—Outstanding account, overcharge	6 16	
50148—Claim No. 10381—Outstanding account, shipment sent to lock-up	35	
		$107 71

T. & N. O. Railway, Agent, Matheson, Ont.

50656—Claim No. 8397—Outstanding account, shortage	$2 55	
50978—Claim No. 8944—Outstanding account, error	10 00	
51879—Claim No. 9526—Outstanding account, C.P.R. error	2 00	
52667—Claim No. 7808—Outstanding account, shortage	74	
		$15 29

T. & N. O. Railway, Agent, North Cobalt, Ont.

55705—Claim No. 9832—Outstanding account, overcharge in weight	$27 76	
56152—Claim No. 8655—Overcharge and damage	33 90	
53008—Claim No. 9283—Overcharge account, damage to stove	2 70	
		$64 36

T. & N. O. Railway, Agent, Cobalt, Ont.

50970—Claims No. 9070—Outstanding account, demurrage	$6 00	
51871—Claims—Outstanding demurrage, shortage, etc.	11 04	
51939—Board of Trade dues	5 00	
52120—Inspection of scales	15 75	
52158—Water supplied (paid Cobalt Water Commission)	18 00	
52653—Claims—Outstanding demurrage, shortage, etc.	83 57	
52833—Claims—Outstanding demurrage, shortage, etc.	44 50	
53061—Water supplied (paid Cobalt Water Commission)	12 60	
53413—Water supplied (paid Cobalt Water Commission)	18 00	
52998—Claims—Outstanding overcharge, shortage, etc.	58 89	
53859—Claim No. 7670—Outstanding account, damage	10 50	
53935—Claim No. 9826—Outstanding account, overcharge	3 64	
54527—Water supplied (paid Cobalt Water Commission)	4 05	
53988—Claim No. 8772—Outstanding account, overcharge	12 53	
54819—Claim No. 8901—Outstanding account, shipment, short	8 51	
55141—Water supplied (paid Cobalt Water Commission)	18 00	
55849—Claims Nos. 9942, 10320—Outstanding account, shortage	47 26	
55834—Water supplied (paid Cobalt Water Commission)	18 00	
55948—Claim No. 9525—Outstanding account, damage	34 00	
56146—Claim No. 10408—Outstanding account, demurrage in error	4 00	
50595—Claim No. 8808—Outstanding account, shipment short	1 25	
		$435 09

T. & N. O. Railway, Agent, South Porcupine, Ont.

50982—Claim No. 8917—Ontstanding account, damage	$5 60	
52839— " " 9679— " " overcharge	21 43	
53943— " " 8948— " " double billing	28 24	
53064—Repairs to typewriter	15 05	
53088—Fire buckets	3 00	
54266—Outstanding account, Canadian Express charges	1 19	
		$74 51

T. & N. O. Railway, Agent, Porcupine, Ont.

53010—Claim No. 9664—Outstanding account, freight charges	$2 45	
		$2 45

T. & N. O. Railway, Agent, North Bay, Ont.

52064—Station supplies	$2 10	
52677—Claim No. 9472—Outstanding account, freight charges	9 40	
53006—Claim No. 9765—Outstanding account, cancellation storage charges	2 85	
53939—Claim No. 9938—Overcharge account, error	19 50	
54076—Claims Nos. 9923 and 9377—Outstanding acct., demurrage	19 20	
54823—Claim No. 10105—Outstanding account, overcharge	4 95	
56150—Claim No. 10196—Outstanding account, error in billing	72	
50597—Claim No. 8032—Outstanding account, undercharge	12 14	
		$70 86

T. & N. O. Railway, Operation Account.

51427—Transfer case	$2 00	
51429—Potatoes, etc.	27 00	
50652—Claim No. 8620—Outstanding damage to baggage	75 56	
50968—Claim No. 8341—Outstanding account, overcharge	1 33	
50972—Stores supplied car "Sir James"	3 25	
50980—Claim No. 8944—Outstanding account, freight charges	6 95	
51610—Vegetables supplied car "Sir James"	26 00	
51625—Stores and supplies	4 96	
51883—Claim No. 8144—Outstanding account, freight charges	279 01	
52464—Lock blocks	3 20	
52589—Claim No. 9082—Outstanding account, freight charges	2 62	
52679—Claim No. 9671—Refund account, shipment prepaid	55 88	
53625—Doors	9 00	
52746—Claims—Overcharge on lumber	70 17	
53012—Claims 9796 and 9804—Freight earnings, outstanding account undercharge	10 43	
53476—Doors	1 50	
54511—Vegetables supplied car "Sir James"	17 50	
53982—Claim No. 9029—Outstanding account undercharge	67 09	
53984—Claims Nos. 9965 and 10018—Outstanding account shortage	12 62	
54856—Claim No. 9528—Outstanding account overcharge	64 46	
55707—Freight earnings—Outstanding account undercharge	5 34	
55944—Freight earnings—Outstanding account undercharge	27 63	
56366—Vegetables supplied car "Sir James"	31 50	
56490—Freight charges	22 00	
		$827 00

T. & N. O. Railway Telegraph, North Bay, Ont.

51489—Telegraph service	$1 24	
51937— "	20	
52076— "	32	
52690— "	82	
53409— "	63	
53506— "	3 58	
53668— "	68	
54175— "	80	
53872— "	75	
53992—Outstanding on message	75	
54264—Telegraph service	77	
54694— "	21	
55234— "	26	
55688— "	22	
55832— "	99	
		$12 22

Tennessee Central R.R. Co., Nashville, Tenn.

50869—Car repairs	$2 27	
		$2 27

TERMINAL R.R. ASSOCIATION OF ST. LOUIS, ST. LOUIS, MO.

51071—Car repairs	$15 11	
50910— "	8 91	
52547— "	3 17	
51958— "	13 62	
53245— "	95	
52872— "	7 76	
54097— "	14 56	
54324— "	14 33	
55287— "	22 04	
55054— "	68 74	
56014— "	2 63	
56438—Car service balance	23 85	
		$195 67

TOLEDO, ST. LOUIS & WESTERN R.R. CO., TOLEDO, OHIO.

50908—Car repairs	$4 12	
51956— "	5 81	
54095— "	9 73	
55052— "	2 69	
56419— "	1 65	
50871— "	2 89	
		$26 89

TOLEDO, PEORIA & WESTERN R.R. CO., PEORIA, ILL.

52439—Car service balance	$6 30	
54578—Car service balance	4 05	
		$10 35

TEXAS & PACIFIC RAILWAY, DALLAS, TEX.

50912—Car repairs	$9 42	
52545— "	2 39	
52870— "	21 50	
54093— "	41	
54322— "	42	
55289— "	19 38	
55337—Car service balance	38 85	
55048—Car repairs	1 13	
56016—Car repairs	1 30	
		$94 80

TORONTO, HAMILTON & BUFFALO RY., DETROIT, MICH.

50970—Claim No. 8341	$6 07	
52467—Ticket balance	4 40	
51956—Car repairs	56	
52646—Ticket balance	5 54	
53243—Car repairs	3 51	
53767—Ticket balance	1 12	
53580— " "	3 38	
54655— " "	2 35	
54326—Car repairs	1 20	
54594—Ticket balance	23 35	
55257— " "	8 25	
55597—Car repairs	4 39	
55050— " "	3 66	
55220— " "	2 46	
55648—Ticket balance	8 25	
56429— " "	1 36	
56452— " "	6 05	
		$85 90

D. E. Thomson, K.C., Toronto, Ont.

50447—Salary as Counsel	$400 00		
50486— " "	400 00		
51513— " "	400 00		
51662— " "	400 00		
52671— " "	400 00		
52760— " "	400 00		
53803— " "	400 00		
53722— " "	400 00		
54801— " "	400 00		
54800— " "	400 00		
55667— " "	400 00		
55738— " "	400 00		
			$4,800 00

E. Tittensor, Cobalt, Ont.

52742—Claim No. 9511	$2 88		
56144— " 10392	1 50		
			$4 38

Eva Tittensor, Stenographer, Cobalt, Ont.

50451—Salary	$65 00		
50489— "	65 00		
51005— "	65 00		
51654— "	65 00		
52691— "	65 00		
52764— "	65 00		
53793— "	65 00		
53710— "	65 00		
54791— "	65 00		
54802— "	65 00		
55657— "	65 00		
55746— "	65 00		
			$780 00

Geo. Taylor Hardware, Limited, Cobalt, Ont.

50495—Claim No. 9045	$51 03		
50646— " 8102	3 50		
51621— " 9259	2 83		
51772— " 9083	4 34		
53017— " 9721	6 72		
53019— " 9630	7 84		
54125— " 9786	6 01		
54861— " 9589	4 61		
56140— " 10337	3 65		
56142— " 10224	4 00		
			$94 53

Toronto Electric Light Co., Limited, Toronto, Ont.

50685—Electric current	$5 91		
50816— " "	5 48		
51693— " "	6 70		
52190— " "	5 70		
53053— " "	3 88		
53062— " "	3 40		
54319— " "	3 19		
54438— " "	3 60		
55008— " "	7 73		
55881— " "	4 10		
56080— " "	3 54		
			$53 23

TIME TABLE DISTRIBUTING CO. OF CANADA, LIMITED, ST. JOHN, N.B.

50913—Distributing folders	$15 00	
51178— " "	15 00	
52081— " "	15 00	
52192— " "	15 00	
53057— " "	15 00	
53068— " "	15 00	
54173— " "	15 00	
54044— " "	15 00	
55139— " "	15 00	
54938— " "	15 00	
55879— " "	15 00	
56200— " "	15 00	
		$180 00

THE THOMAS CO., NORTH BAY, ONT.

50939—Expenses *re* watch and clock inspection	$9 85	
50710— " " " "	7 85	
50802— " " " "	12 00	
53669— " " " "	9 85	
53060— " " " "	40 00	
53262— " " " "	9 85	
53623—Paste	75	
53666—Expenses *re* watch and clock inspection	20 00	
54241— " " " "	10 85	
54338— " " " "	9 50	
54936— " " " "	4 00	
55266— " " " "	10 00	
51487— " " " "	17 50	
51945— " " " "	16 00	
52007— " " " "	10 35	
54733— " " " "	20 00	
52260— " " " "	10 35	
53870—Repairing clocks	15 87	
54254—Expenses *re* watch and clock inspection	20 00	
		$254 57

TRANSCONTINENTAL FREIGHT BUREAU, CHICAGO, ILL.

50973—Tariffs	$4 05	
50804— "	1 48	
52079— "	1 57	
52080— "	1 41	
53055— "	1 39	
53058— "	1 80	
54171— "	1 20	
54262— "	2 06	
54942— "	4 86	
55690— "	1 64	
55528— "	5 91	
		$27 37

TRAVELERS INSURANCE CO., HARTFORD, CONN.

51391—Ticket balance	$1 65	
51380— " "	1 65	
52469— " "	96	
52648— " "	3 85	
53771— " "	2 75	
53582— " "	1 38	
54657— " "	14	
54596— " "	1 51	
55359— " "	1 10	
55650— " "	1 38	
56431— " "	1 93	
56454— " "	69	
		$18 99

TEMISKAMING DISTRICT POULTRY ASSOCIATION, ENGLEHART, ONT.

50683—Donation *re* Poultry Show	$5 00	
55780— " " "	5 00	
		$10 00

TORONTO WORLD, TORONTO, ONT.

50909—Annual subscription	$3 00	
		$3 00

TORONTO STAR WEEKLY, TORONTO, ONT.

50911—Twelve weekly copies	$0 60	
		$0 60

TEMPLETON, KENLY & CO., LIMITED, TORONTO, ONT.

51433—Pinions . .	$37 50	
		$37 50

TAXI CABS, LIMITED, TORONTO, ONT.

50500—Service	$0 70	
52074— "	5 00	
		$5 70

TOMSTOWN LUMBER CO., TOMSTOWN, ONT.

50648—Claim No. 8846	$2 75	
		$2 75

D. R. THOMAS, G. F. & P. A. DEPT., NORTH BAY, ONT.

50680—Travelling expenses	$74 35	
		$74 35

TEMISKAMING TELEPHONE CO., LIMITED, NEW LISKEARD, ONT.

50700—Rental of poles	$114 00	
51739—Exchange service	78 50	
52333—Messengers and service	4 50	
52941—Exchange service	22 50	
53119— " "	15 00	
53463— " "	17 50	
53084— " "	28 50	
54735— " "	5 00	
54256— " "	28 50	
54654— " "	50 00	
55986— " "	55 00	
		$419 00

TEXAS & NEW ORLEANS R. R. CO., HOUSTON, TEX.

51809—Car repairs	$40 65	
51952 - "	5 46	
		$46 11

J. J. TURNER & SONS, PETERBORO, ONT.

52331—Tents .	$43 97	
52468—Mail bags	27 00	
		$70 97

TORONTO SALT WORKS, TORONTO, ONT.

52335—Salt .	$95 00	
		$95 00

TORONTO SILVER PLATE CO., TORONTO, ONT.

52337—Reflectors	$21 50	
52446—Replating reflectors	5 75	
		$27 25

WM. TWOCOCK, CHARLTON, ONT.

52831—Claim No. 9381	$5 00	
		$5 00

TEMISKAMING TRADING CO., LTD., HAILEYBURY, ONT.

52829—Claim No. 9470	$1 01	
54915— " 9994	1 85	
55847— " 9937	2 50	
50499— " 8518	1 86	
54074— " 9936	1 96	
55106— " 10150	4 40	
		$13 58

TOLEDO & OHIO CENTRAL RAILWAY CO., CLEVELAND, O.

52543—Car repairs	$1 85	
		$1 85

TOLEDO TERMINAL RAILROAD CO., TOLEDO, O.

52549—Car repairs	$6 68	
51807— "	5 15	
54328— "	4 39	
		$16 22

TRANSCONTINENTAL RAILWAY, MONCTON, N.B.

51776—Claim No. 9206	$2 50	
55580—Gas	1 29	
55652—Ticket balance	106 01	
56433— " "	1,945 36	
55361— " "	19 21	
55633—Interline freight balance	59 19	
		$2,133 56

TUDHOPE LUMBER CO., ELK LAKE, ONT.

52462—Lumber	$3 00	
53174— "	385 07	
54210— "	231 03	
55555— "	269 05	
		$888 15

TAYLOR INSTRUMENT COMPANIES, ROCHESTER, N.Y.

52470—Thermometers	$12 00	
53517—Hydrometer	2 40	
53212—Air meters	45 22	
		$59 62

J. G. TURNEY, WAHTAYBEAG, ONT.

52857—Pulpwood	$54 52	
		$54 52

A. C. TEED, MCCOOL P.O., ONT.

53021—Claim No. 9597	$3 50	
		$3 50

TRANSPORTATION UTILITIES CO., NEW YORK, N.Y.

53621—Flexolith materials	$129 50	
53464—Window screens	114 87	
54509—Flexolith materials	24 75	
		$269 12

J. THOMPSON, CANE, ONT.

53777—Ties	$54 69	
54775— "	110 68	
		$165 37

TORONTO WEEKLY RAILWAY & STEAMBOAT GUIDE, LTD., TORONTO, ONT.

53066—Subscription	$2 60	
55990— "	2 60	
		$5 20

A. TREMBLAY, COCHRANE, ONT.

53072—Pulpwood	$45 56	
		$45 56

P. TREMBLAY, PORCUPINE, ONT.

53194—Donation, account pig alleged killed	$10 00	
		$10 00

J. H. A. TAYLOR, NORTH BAY, ONT.

53466—Bread	$4 20	
		$4 20

THISTLE RUBBER TYPE CO., SOMBRA, ONT.

53472—Rubber stamps	$1 05	
51435— " "	1 35	
		$2 40

YE TOGGERY SHOP, COCHRANE, ONT.

53814—Claim No. 9530	$20 42	
		$20 42

W. J. TAYLOR, LIMITED, WOODSTOCK, ONT.

53874—Advertisement in *Rod and Gun Magazine*	$10 00	
		$10 00

DAVID TAIT, IRON BRIDGE P.O., ALGOMA, ONT.

54206—Trees, etc.	$33 25	
		$33 25

J. A. TONER, HAILEYBURY, ONT.

55942—Claim No. 10341	$4 00	
		$4 00

TRANS-MISSOURI FREIGHT BUREAU, KANSAS CITY, MO.

53260—Tariffs	$0 82	
54652— "	1 69	
		$2 51

TRAFFIC SERVICE BUREAU, CHICAGO, ILL.

55137—Tariffs	$10 00	
		$10 00

TEMISKAMING MINING CO., LIMITED, COBALT, ONT.

55940—Claim No. 5661	$8 04	
		$8 04

B. & S. H. THOMPSON CO., LIMITED, MONTREAL, QUE.

54514—Steel sheets annealed	$19 25	
		$19 25

TEMISKAMING HERALD, NEW LISKEARD, ONT.

55877—Advertising	$4 80	
		$4 80

TAYLOR FORBES CO., LIMITED, GUELPH, ONT.

55553—Grates and shakers	$0 88	
		$0 88

JOHN TAYLOR CO., LIMITED, TORONTO, ONT.

51608—Soap	$44 00	
52472— "	26 00	
53468— "	35 00	
54499— "	13 50	
54204— "	30 50	
55621— "	12 78	
55532— "	30 50	
56253— "	17 00	
56368— "	13 50	
		$222 78

TEXARKANA & FORT SMITH RAILWAY CO., TEXARKANA, TEX.

50914—Car repairs	$5 77	
		$5 77

TEMISKAMING COUNTY L. O. L. No. 60, NEW LISKEARD, ONT.

55722—Refund of guarantee on excursion tickets	$94 10	
		$94 10

D. C. THOMSON, ORILLIA, ONT.

55843—Claim No. 10113	$2 00	
		$2 00

G. TANCREDI, M. P. DEPT., NORTH BAY, ONT.

55826—Travelling expenses	$7 40	
		$7 40

TUCKETT CIGAR CO., LIMITED, HAMILTON, ONT.

55534—Tobacco stems	$12 55	
		$12 55

TORONTO DISTRICT LABOUR COUNCIL, TORONTO, ONT.

54818—Advertising in Labour Day Souvenir	$15 00	
55731—Advertising	15 00	
		$30 00

TORONTO SANITARY TOWEL SUPPLY CO., TORONTO, ONT.

50757—Towels supplied	$1 00	
51020— "	1 00	
51979— "	1 00	
52078— "	1 00	
53207— "	1 00	
53086— "	1 00	
54177— "	1 00	
54258— "	1 00	
55135— "	1 00	
54940— "	1 00	
55844— "	2 00	
		$12 00

TAYLOR & ARNOLD, LIMITED, MONTREAL, QUE.

51616—Car parts	$28 85	
52339—Coupler repair parts	16 15	
52662—Car knuckles	11 85	
53474— "	22 50	
		$79 35

A. E. TAYLOR, HAILEYBURY, ONT.

51691—Rental telephone office at Elk Lake	$10 00	
		$10 00

TALLMAN BRASS & METAL CO., HAMILTON, ONT.

51431—Brass rods	$12 29	
51614—Brass tubes	1 13	
52341—Copper sheets	9 30	
52664—Copper rods	7 50	
53619— "	15 67	
53470— "	12 11	
54208— "	9 00	
55530—Brass rods	31 33	
		$98 33

THORPE BROS., NEW LISKEARD, ONT.

50497—Claim No. 9023	$0 50	
50966— " 9109	3 00	
51623— " 9024 and 9255	3 00	
52996— " 9684	14 50	
53933— " 9821	2 00	
50650— " 9110 and 9111	1 25	
		$24 25

TOWN OF TIMMINS, TIMMINS, ONT.

50971—Water supplied	$261 25	
52135— " "	280 20	
53054— " "	259 95	
54981— " "	178 05	
55988— " "	189 60	
		$1,169 05

THREADING MACHINE CO., SANDUSKY, OHIO.

51612—Threading dies	$0 99	
		$0 99

THIEL DETECTIVE SERVICE CO., TORONTO, ONT.

51943—Refund of fares paid	$7 75	
52133—Investigating	304 40	
53059—Return of fares paid	11 00	
54737—Investigating	132 80	
		$455 95

F. TIGNANELLI, M. P. DEPT., NORTH BAY, ONT.

55079—Travelling expenses	$3 00	
		$3 00

UNION PACIFIC RLD. CO., OMAHA, NEB.

51363—Ticket balance	$15 30	
51393— "	44 30	
50916—Car repairs	1 03	
50984—Claim No. 8040	54 76	
51352—Car service balance	11 70	
51627—Claims Nos. 7115 and 9066	7 52	
51811—Car repairs	7 69	
52471—Ticket balance	87 40	
52553—Car repairs	68	
52650—Ticket balance	1 21	
52843—Claim No. 9567	1 90	
53025— " 8786	2 87	
52748— " 9697	1 19	
52874—Car repairs	4 60	
53861—Claims	4 77	
53947—Claim No. 9934	2 75	
54099—Car repairs	84	
54921—Claims	5 16	
55360—Car repairs	24 04	
55853—Claims Nos. 10144 and 10183	7 30	
56018—Car repairs	6 72	
56156—Claim No. 10366	2 82	
		$296 55

UNITED STATES STEEL PRODUCTS CO., NEW YORK, N.Y.

51618—Steel	$102 93	
52342—Steel plates, etc.	47 60	
52224—Steel beams	136 05	
53629— "	56 58	
53480—Wheels	364 00	
54515—Steel plates	20 41	
54212—Angles	5 62	
54518—Steel plates	5 85	
55211— "	23 03	
55557—Angles	3 08	
54944—Steel plates	16 71	
55358— "	74 20	
		$856 06

UNIVERSITY OF TORONTO, Y.M.C.A., TORONTO, ONT.

55925—Advertising	$15 00	
		$15 00

UNIVERSAL IRON & SUPPLY CO., ST. LOUIS, MO.

52253—Chalk	$4 50	
		$4 50

UNION RLD. COMPANY, PITTSBURGH, PA.

50873—Car repairs	$2 03	
50918— "	42	
52557— "	41	
53112— "	3 42	
53560—Car service balance	17 55	
54633— " "	14 85	
54580— " "	9 90	
55339— " "	5 40	
55636— " "	4 05	
56440— " "	4 05	
		$62 08

UNION TANK LINE COMPANY, NEW YORK, N.Y.

51365—Car service balance	$3 92	
51356— " "	3 09	
52441— " "	3 09	
52624— " "	3 09	
53739— " "	85	
54582— " "	3 21	
55341— " "	1 60	
55638— " "	1 60	
56421— " "	3 21	
56442— " "	80	
		$24 46

UNITED TYPEWRITER COMPANY, LTD., TORONTO, ONT.

51437—Repairs to machines	$12 43	
51495—Type bars	1 22	
50502—Inspection	15 00	
51252—Type bar	60	
51620—Rotary Neostyle boxes, inks and ribbons	101 67	
51741—Typing	29 31	
51947— "	2 50	
52345—Typewriter ribbons, etc.	77 81	
52082—Type bar	62	
52150—Repairs to machines	8 10	
52194—Inspection	15 00	
52666—Typewriter ribbons, etc.	25 52	
53063—Repairs to machines	11 75	
53627—Neostyle ink and ribbons	8 06	
53482—Repairs to machines and stencil paper	46 32	
54179—Repair parts	60	
54513—Stationery	22 17	
54739—Inspection	15 00	
54214—Ribbons	4 14	
54268—Repairs to machines	4 65	
54516—Ribbons, ink and carbon paper	14 31	
54696—Repairs to machines	8 25	
55559—Ribbons, ink, etc.	45 37	
55296—Inspection and repairs	17 00	
55536—Ribbons and ink	17 02	
56255—Repair parts and paper	24 63	
56370—Ribbons, etc.	41 67	
		$570 72

UNION REFRIGERATOR TRANSIT CO., MILWAUKEE, WIS.

51354—Car service balance	$3 79	
		$3 79

UNITED COAL SALES CO., DETROIT, MICH.

53478—Smithing coal	$103 05	
		$103 05

VICKSBURGH, SHREVEPORT & PACIFIC RLY., NEW ORLEANS, LA.

50875—Car repairs	$0 83	
50920— "	84	
52876— "	10 82	
		$12 49

THE VIRGINIA RLY. COMPANY, NORFOLK, VA.

51367—Car service balance	$2 25	
52443— " "	1 35	
52626— " "	4 50	
53741— " "	2 25	
		$10 35

VANTUYL & FAIRBANK, PETROLIA, ONT.

51439—Cups	$7 80	
51622— "	7 80	
54579— "	3 00	
		$18 60

VAILLANCOURT BROS., OSBORNE, ONT.

50658—Claim No. 9289	$1 80	
		$1 80

J. W. VANDERGRIFT, WESTERLEIGH, SASK.

50660—Claim No. 4734	$6 90	
		$6 90

VENDOME HOTEL CO., HAILEYBURY, ONT.

51909—Board Engineering Staff	$15 40	
52052— " "	2 40	
55759— " "	8 40	
		$26 20

VICTOR MFG. & GASKET CO., CHICAGO, ILL.

52347—Ferrules	$11 18	
54517— "	13 23	
		$24 41

HENRY VERNON & SONS, HAMILTON, ONT.

54946—Directory	$5 00	
		$5 00

J. M. VOITH CO., INC., NEW YORK, N.Y.

55855—Claim No. 9888	$27 06	
		$27 06

DR. E. G. VERNON, COCHRANE, ONT.

52150—Services rendered	$7 00	
		$7 00

W. VANMEER, THORNLOE, ONT.

52557—Ties	$19 11	
		$19 11

A. VALLEE, COCHRANE, ONT.

52557—Ties	$43 40	
52690— "	26 10	
		$69 50

A. VanKoughnet & Co., Toronto, Ont.

52276—Envelopes	$38 50	
		$38 50

M. Vaillancourt, Cochrane, Ont.

52857—Pulpwood	$39 56	
		$39 56

E. Vaillancourt, Cochrane, Ont.

52891—Pulpwood	$43 32	
53251— "	11 99	
		$55 31

Verona Tool Works, Pittsburgh, Pa.

53484—Adzes	$21 54	
		$21 54

Windsor, Essex & Lake Shore Rapid Rly., Windsor, Ont.

52473—Ticket balance	$1 30	
		$1 30

A. Wickstead, Bourkes, Ont.

52557—Ties	$49 02	
		$49 02

A. R. Williams Machinery Co., Ltd., Toronto, Ont.

52196—Knives	$36 00	
52729—Barker machinery	917 40	
		$953 40

F. P. Weaver Coal Co., Buffalo, N.Y.

53996—Claim No. 9398	$2 93	
54867— " 9858	3 83	
50664—Claims Nos. 9037 and 5982	13 10	
50985—Claim No. 9197	1 00	
51629— " 8928	3 16	
52641— " 8952	7 41	
52847— " 7991	15 57	
52750— " 7990	14 71	
53014— " 9758	116 00	
		$177 71

Wabash Rld., St. Louis, Mo.

50877 Car repairs	$11 93	
51395—Ticket balance	2 60	
50930—Car repairs	15 35	
51382—Ticket balance	85	
52534—Car repairs	41 13	
53562—Car service balance	58 50	
55291—Car repairs	44 07	
		$174 43

Wheeling & Lake Erie Rly. Co., Cleveland, Ohio.

51369—Car service balance	$56 25
50922—Car repairs	7 09
51358—Car service balance	9 00
51819—Car repairs	1 33
52445—Car service balance	11 25

WHEELING & LAKE ERIE RLY. CO., CLEVELAND, OHIO.—*Cont'd.*

52555—Car repairs	$8 66	
52628—Car service balance	43 65	
53247—Car repairs	69	
53743—Car service balance	24 75	
52878—Car repairs	7 32	
53564—Car service balance	97 65	
54635— " "	60 75	
55343— " "	4 95	
		$333 34

C. L. WILLIAMS, CONNAUGHT, ONT.

51497—Switch sets	$66 62	
51497—Poles	57 35	
51776—Claim No. 9030	2 60	
56380—Lumber	82 94	
		$209 51

E. M. WHITE, CHARLTON, ONT.

51497—Switch sets	$89 59	
		$89 59

C. WHITTON, CHARLTON, ONT.

50746—Claim No. 8697	$10 60	
52845— " 8697	6 72	
		$17 32

R. R. WOODS, ELK LAKE, ONT.

50986—Claim No. 8725	$14 05	
		$14 05

WIDNOON COAL MINING CO., REYNOLDSVILLE, PA.

51256—Coal	$107 46	
		$107 46

WALKER SUPPLY CO., NORTH BAY, ONT.

51624—Carbolacene	$51 50	
52349— "	37 50	
53598— "	51 50	
54523— "	37 50	
55565— "	37 50	
56259— "	51 50	
		$267 00

J. T. WELBOURNE, UNO PARK, ONT.

51631—Claim No. 9033	$1 02	
		$1 02

GEO. WARRELL, COCHRANE, ONT.

50601—Claim No. 8451	$3 97	
52643— " 9379	28 81	
		$32 78

L. C. WIDEMAN, CHARLTON, ONT.

50649—Claim No. 8564	$3 82	
50662— " 8563	1 14	
		$4 96

C. G. Watson, Engineering Dept., North Bay, Ont.

50709—Travelling expenses	$50 55	
53264— "	4 35	
54706— "	5 50	
55079— "	9 95	
55961— "	4 00	
		$74 35

Wabi Iron Works, Ltd., New Liskeard, Ont.

50975—Material and labour	$49 40	
50806—Brasses for ditcher	2 50	
52717—Claim No. 9682, siding rebate	135 00	
54000— " 10049 "	72 00	
54865— " 9797	6 24	
		$265 14

Whitman & Barnes Mfg. Co., St. Catharines, Ont.

51626—Wrenches	$31 75	
52087—Spring keys	6 23	
53633—Cotters	22 22	
54216—Drills and cotters	15 38	
55569—Drills and sleeves	7 58	
56382—Drills	4 82	
		$87 98

Welland Vale Mfg. Co., St. Catharines, Ont.

54886—Scythes	$76 88	
		$76 88

Wisconsin & Michigan Rly., Peshtigo, Wis.

55056—Car repairs	$0 92	
		$0 92

H. W. Wirbin, South Porcupine, Ont.

55286—Commission on excursion tickets sold	$16 55	
		$16 55

Wickes Boiler Co., Saginaw, Mich.

55857—Claim No. 9837	$27 52	
		$27 52

Watt & Scott, Ltd., Montreal, Que.

55859—Claim No. 10191	$3 33	
		$3 33

Warden King, Ltd., Montreal, Que.

56261—Shaker handles	$0 56	
		$0 56

Walborn & Davidson, North Bay, Ont.

56263—Wall paper	$22 76	
51441— "	9 39	
		$32 15

Isaac Walle, Cochrane, Ont.

53269—Pulpwood	$308 00	
		$308 00

WABASH PITTSBURG TERMINAL RLY. CO., PITTSBURG, PA.

50924—Car repairs	$0 51	
53745—Car service balance	4 50	
53566— " "	19 35	
	90	
		$25 26

WESTERN MARYLAND RLD., BALTIMORE, MD.

50926—Car repairs	$4 61	
51360—Car service balance	3 15	
51815—Car repairs	5 77	
52085— "	2 68	
54790— "	2 16	
55293— "	3 78	
55058— "	8 98	
56071— "	5 64	
		$36 77

WASHINGTON SOUTHERN RLY. CO., RICHMOND, VA.

50928—Car repairs	$3 54	
51050— "	23 74	
51813— "	10 82	
52880— "	35	
		$38 45

WESTERN RLY. OF ALABAMA, ATLANTA, GA.

52630—Car service balance	$2 25	
56444— " "	3 15	
		$5 40

WARWICK BROS. & RUTTER, LTD., TORONTO, ONT.

50687—Stationery and printed forms	$16 50	
51098— " "	12 00	
51254— " "	38 50	
51638— " "	69 50	
52083— " "	70 00	
52026— " "	122 11	
52670— " "	13 00	
53123— " "	27 50	
53299— " "	60 00	
53631—Office books	36 75	
53486—Stationery	16 50	
54183—Voucher forms	76 00	
54321—Cash book	14 00	
54937—Stationery and printed forms	99 75	
55561— " "	151 20	
55362— " "	9 25	
55702— " "	61 16	
56007— " "	4 50	
56257— " "	96 75	
56293— " "	4 90	
56376— " "	62 50	
		$1.062 37

WESTERN CLASSIFICATION COMMITTEE, CHICAGO, ILL.

50977—Subscription	$2 00	
		$2 00

WORLD'S ONLY DUSTLESS BRUSH CO., NORTH BAY, ONT.

51443—Floor brushes	$15 00	
51608— "	3 75	
52351— "	3 50	
53488— "	7 50	
54520— "	7 25	
56265— "	3 40	
56378— "	7 15	
		$47 55

F. H. WHITTLESEY & CO., WINDSOR LOCKS, CONN.

51628—Tissue copy paper	$25 50	
55567— " "	25 50	
		$51 00

E. T. WRIGHT CO., LTD., HAMILTON, ONT.

51630—Lanterns	$39 00	
53600— "	1 00	
		$40 00

J. WHITEHAIR, NEW LISKEARD, ONT.

52857—Pulpwood	$38 94	
		$38 94

GEO. WHITE, WATAHBEAG, ONT.

52857—Pulpwood	$60 28	
		$60 28

S. WEST, MCCOOL, ONT.

53121—Supplies for private car	$1 05	
	75	
54323— " "	3 83	
		$5 63

G. WALLINGFORD, METTAGAMI HEIGHTS, ONT.

53777—Ties	$90 00	
54259— "	30 00	
		$120 00

JOHN WINTERS, THORNLOE, ONT.

52778—Pulpwood	$49 00	
		$49 00

R. WAKEFORD, HOMER SIDING, ONT.

52778—Pulpwood	$34 92	
52882— "	9 59	
		$44 51

WHITE ENAMEL REFRIGERATOR CO.—ST. PAUL, MINN.

52908 Refrigerator	$186 50	
		$186 50

WAGAR & GRIFFITH FURNITURE CO., NORTH BAY, ONT.

53602—Mattresses	$9 60	
55698—Carpet binding	95	
		$10 55

WESTERN PACIFIC RAILWAY CO., SAN FRANCISCO, CAL.

51960—Car repairs	$0 56	
		$0 56

WOOD VALLANCE CO., HAMILTON, ONT.

51636—Cuspidors	$8 33	
52668—Pulleys	63	
55700— "	45	
56374—Hand Taps	1 05	
		$10 46

J. B. WILLIS, TRAVELLING AUDITOR, NORTH BAY, ONT.

54181—Travelling expenses	$9 60	
55312— " "	15 80	
55959— " "	34 25	
		$59 65

WEST DISINFECTING CO., TORONTO, ONT.

53604—Protectus machines	$48 00	
54521—Repairs	1 75	
55694—Protectus fluid	20 00	
		$69 75

WABI-KON CAMP, LAKE TEMAGAMI, ONT.

53090—Advertising	$25 00	
		$25 00

W. A. WOODIN, THORNLOE, ONT.

52857—Pulpwood	$37 86	
52857—Pulpwood	9 46	
		$47 32

W. L. WOOD, TORONTO, ONT.

52722—Anti-Pneumo serum	$7 75	
		$7 75

H. WILLIAMS, CORNWALL, ONT.

52647—Claim No. 5770	$52 80	
		$52 80

H. WELCH, MILBERTA, ONT.

52645—Claim No. 9136	$4 42	
		$4 42

T. E. WARNER, MOTIVE POWER DEPT., NORTH BAY, ONT.

51120—Travelling expenses	$5 40	
		$5 40

WATSON JACK CO., MONTREAL, QUE.

51632—Blue stone	$45 00	
53490— "	60 75	
55696— "	67 50	
		$173 25

W. A. WOOD, MONTREAL, QUE.

52353—Shop time sheets	$20 00	
55563—Time clock slips	2 22	
55692—Time clock springs	25	
		$22 47

WEST DURHAM REVIEW, DURHAM, ONT.

52000—Advertising	$3 00	
		$3 00

W. WILSON, EARLTON, ONT.

52690—Ties	$75 90	
52690— "	52 50	
		$128 40

A. WILSON, HEASLIP, ONT.

53777—Ties	$100 00	
53777— "	25 30	
53777— "	17 50	
		$142 80

R. WILSON, KENABEEK, ONT.

54259—Ties	$71 20	
		$71 20

MRS. J. WILLIAMS, COCHRANE, ONT.

52637—Claim No. 9062	$0 98	
		$0 98

WATSON CO., LTD., NEW LISKEARD, ONT.

51778—Claim No. 9418	$2 18	
52639—Claim No. 9321	5 40	
53998—Claim No. 10052—Siding rebate	78 00	
		$85 58

YOUNG COMPANY, LTD., NORTH BAY, ONT.

50501—Claim No. 9058	$6 80	
51445—Groceries	255 17	
51640—Groceries	36 40	
52355—Bon Ami	15 25	
51780—Claim No. 9031	2 25	
52673—Groceries	117 40	
52651—Claim No. 8079	8 86	
53635—Bon Ami	14 40	
52752—Claim No. 9196	6 78	
53016—Claim No. 9297	9 11	
53608—Groceries	208 45	
53863—Claim No.9696	6 51	
54137—Claim No. 9967	1 89	
54525—Groceries	315 47	
54002—Claims Nos. 5540 and 9906	35 21	
54218—Groceries	707 39	
55571— "	647 22	
55108—Claim No. 9907	1 62	
55704—Groceries	359 73	
56257— "	405 82	
56384— "	231 93	
		$3,393 66

WM. YOUNG, GENERAL ROADMASTER, NORTH BAY, ONT.

51283—Travelling expenses	$8 25
51202— " "	7 00
51866— " "	8 00
52262— " "	7 90
53375— " "	11 10
53266— " "	8 45

WM. YOUNG, GENERAL ROADMASTER, NORTH BAY, ONT.—*Cont'd.*

54763—Travelling expenses	$5 45	
54730— " "	8 40	
55079— " "	10 50	
55264— " "	12 25	
56281— " "	11 75	
56070— " "	6 80	
		$105 85

Y.M.C.A. OF CANADA, TORONTO, ONT.

50878—Donation	$20 00	
		$20 00

W. YOUNG, IROQUOIS FALLS, ONT.

52557—Ties	$36 70	
53777— "	20 00	
		$56 70

G. C. YAKE, TORONTO, ONT.

53606—Lamps	$32 88	
		$32 88

C. W. YATEMAN, WAWBEWAWA, ONT.

54259—Ties	$21 11	
		$21 11

O. YANDEAU, NORTH BAY, ONT.

54050—Unclaimed wages	$72 37	
		$72 37

W. J. YATES, NEW LISKEARD, ONT.

50503—Claim No. 8510	$6 41	
50603—Claim No. 8869	1 39	
50666—Claims Nos. 8868, 8873, 9241, 9243	11 33	
50990—Claim No. 8874	93	
51633—Claims Nos. 8870, 9245, 9250, 9246, 9248, 9249	25 86	
51885—Claims Nos. 9280 and 9247	5 40	
51782—Claim No. 9031	2 42	
52649—Claim No. 9242	3 47	
52849—Claim No. 9244	2 82	
53027—Claim No. 9281	5 69	
53816—Claims Nos. 10038 and 10047	2 36	
54004—Claims Nos. 10037 and 10034	3 15	
54923—Claims Nos. 10036 and 10050	11 72	
54854—Claim No. 10171	72	
55110—Claims Nos. 10170 and 10033	11 87	
55861—Claim No. 10032	6 02	
55950—Claim No. 10145	4 52	
56158—Claim No. 10035	5 28	
		$111 36

E. A. ZABIKE, COBALT, ONT.

50653—Claim No. 8485	$10 56	
		$10 56

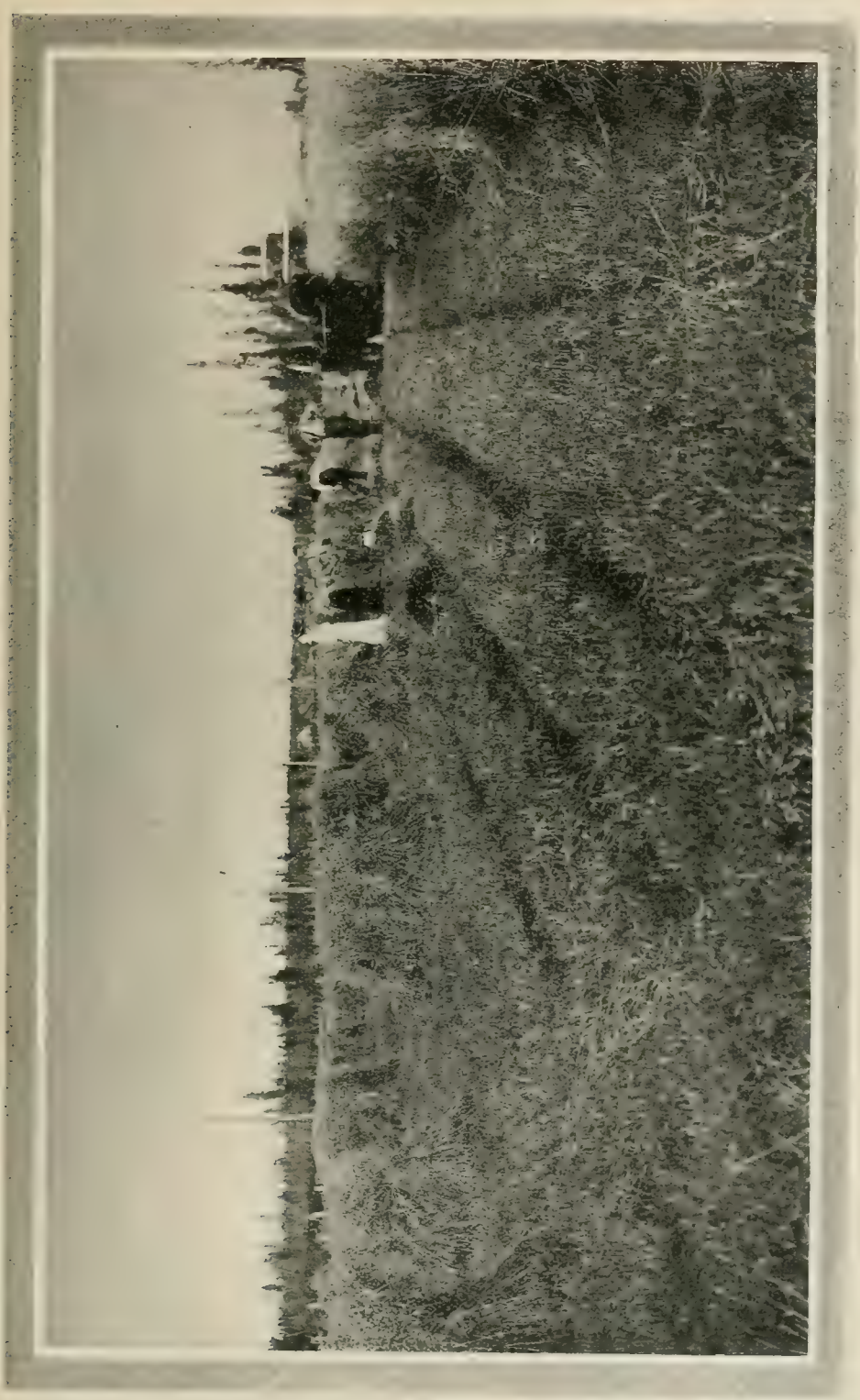
JOSEPH ZION, COBALT, ONT.

51784—Claim No. 9445	$0 80	
		$0 80
		$2,132,241 30

RECAPITULATION ACCOUNTS PAYABLE

NOVEMBER 1ST, 1914, TO OCTOBER 31ST, 1915.

General Ledger Balance Accounts Payable as of November 1st, 1914		$538,035 82
Disbursements for year, November 1st, 1914, to October 31st, 1915, as per detailed statement		2,132,241 30
Cash payments by Treasurer during year	$2,228,428 65	
Vouchers applied to credit of contra accounts	8,043 17	
Cancellation registration of vouchers registered prior to November 1st, 1914	989 65	
General Ledger Balance Accounts, payable as of October 31st, 1915	432,815 65	
	$2,670,277 12	$2,670,277 12



Cutting Oats on A. W. Skinner's Farm, Englehart, Ont. September, 1915.

CONTRACTS, AGREEMENTS, ETC.

MEMORANDUM OF AGREEMENT made this thirty-first day of August, one thousand nine hundred and fifteen.

BETWEEN:

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called "the Commission"

Of the First Part

—and—

THE CANADIAN PACIFIC RAILWAY COMPANY, hereinafter called the Company

Of the Second Part.

1. WHEREAS the Company own and operate a system of telegraph lines for the public as well as for its own business and the Commission propose to operate telegraph lines on its line of railway for similar purposes IT IS MUTUALLY AGREED between the Commission and the Company that in consideration of the interchange of telegraph business one with the other that through rates shall be made between points on the system and points on the other, which through rates shall in no case be less for the combined distance of transmission on the two lines than the Company's telegraph rates for corresponding distances on its own lines, without the consent of both parties.

2. IT IS FURTHER AGREED that the through rates between stations on the Commission's railway and all points on the Company's telegraph system and its connections shall be twenty cents per ten words and one cent for each additional word more than the rate to and from North Bay, Ontario, except as per the following two paragraphs.

3. The rate between the Commission's offices and office in section two and three on the Company's telegraph lines will be fifty cents per ten words and three cents for each additional word. Said section two comprises all offices on the main line west of Sudbury and including Nepigon, Ontario. Section three comprises all offices on the branch line from Sudbury, Ontario, to Saulte Ste. Marie, Michigan. Little Current, Manitoulin Island although shown in Section 3 in the Company's tariff book, is not one of the Company's offices.

4. The rate between points on the Commission's railway and points on the Company's railway will be twenty cents per ten words and two cents for each additional word, if the railway mileage between said offices is one hundred miles or less.

5. Tolls on telegrams referred to in the last preceding paragraph to be divided equally between the Commission and the Company. On all other telegrams not covered by this exception the Commission's proportion of the tolls will be twenty cents per ten words and one cent for each additional word.

6. The rate on newspapers, special despatches will be fifteen cents per one hundred words more than the press rate from North Bay, these additional tolls to be the Commission's proportion. Rate on cablegrams to be the same as from North Bay, the Commission to receive one cent per word as its proportion. The Company will deliver all telegrams received at North Bay from points on the Commission's railway. The Commission will allow the Company twenty per cent.

of their tolls on all business handled at North Bay that is not transferred to the Company's lines.

7. The Company will supply the Commission with battery power at North Bay free of charge, and furnish the required number of tariff books and circulars relative to tariffs at cost price. Message and other telegraph forms for use on the Commission's railway will be supplied by the Commission.

8. The Commission will put its wire or wires into the Company's office at North Bay and provide the necessary instruments for the same. The Company will provide operator and messenger.

9. The Commission will maintain its own lines and instruments.

10. The Commission shall have the right to erect its telegraph and telephone wires on the Canadian Pacific Railway Company's poles between Nipissing Junction and the Company's offices at North Bay.

11. The joint earnings shall be divided monthly between the parties hereto, each reporting to the other in the manner usual between connecting telegraph companies.

12. Each party shall be responsible to the other for any errors, delays, non-delivery, or any act or omission resulting in claims for damages that may occur on its lines in the case of messages received by the other for transmission over the joint lines, and each party shall be responsible for any delay, errors or omissions in the case of joint business received by it for points on the lines of the other, which delays, errors or omissions have resulted before delivery to the other.

13. This agreement shall remain in force for a period of one year from its date and thereafter until terminated by three months' notice in writing from either party to the other, which notice may be either delivered or mailed, postage prepaid and registered, addressed to Superintendent of the Commission at North Bay, or Manager of Telegraphs of the Company at Montreal.

14. The Agreement between the parties dated the thirty-first day of August, 1905, is hereby cancelled and annulled to all intents and purposes as and from the date hereof.

IN WITNESS WHEREOF the parties hereto have subscribed these presents the day and year first above written.

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.

J. L. ENGLEHART,
Chairman.

A. B. ODLUM.

W. H. MAUND,
Secretary-Treasurer.

CANADIAN PACIFIC RY. COMPANY.

GEORGE BURY,
Vice-President.

MEMORANDUM OF AGREEMENT made this 27th day of November, one thousand nine hundred and fourteen.

BETWEEN:

THE MUNICIPAL CORPORATION OF THE TOWN OF COCHRANE, hereinafter called the Corporation

—and—

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission.

WHEREAS the Corporation has requested the Commission to permit the Corporation to use Norman Lake as a source of public water supply for the said Corporation and to lay a 10-inch water main under the station grounds of the Commission at the Town of Cochrane, all as shown on Plan dated the 6th day of September, 1911, a blue print of which is hereto attached, to which the Commission has assented on the terms hereof.

NOW THESE PRESENTS WITNESS that it has been agreed between the parties as follows:

1. The Commission hereby grants unto the Corporation full and free right and authority to take and draw by a pump or other means water from Norman Lake for the purpose of supplying water for the use of the Town of Cochrane with the right and authority to enter upon the lands of the said Commission and to sink and lay in through and under the station grounds of the Commission a 10-inch cast iron water main and other necessary mains, conduits, pipes and other conveniences requisite for the conveyance and distribution of water from said Lake, and to construct, erect and maintain in and upon the thirty-three foot reserve around the said Norman Lake a pumping station containing the machinery necessary for the operation of a public water works system; all of said work to be done at the cost and expense of the Corporation and to the satisfaction of the Chief Engineer of the Commission and to be carried on from time to time in the manner and at the times and places approved by said Engineer.

2. The said pumping station, water mains, pipe lines, etc., after having been constructed and erected, shall be maintained by and at the expense of the Corporation.

3. The Corporation shall immediately repair any damage or injury which may be done to the tracks, grounds or other property of the Commission by reason of the work aforesaid, and shall from time to time promptly repair at its own expense any injury which may at any time be done to the said tracks or any of the said property by reason of the construction or use of such pumping station, water mains, water pipes, or any of them and in case of the failure of the corporation to restore and repair any such damage same may be restored and repaired by the Commission and the Corporation will promptly pay to the Commission all costs and expenses thereof or connected therewith as same shall be certified by the Chief Engineer for the time being of the Commission whose certificate in the premises shall be final and conclusive upon both parties.

4. The Corporation will indemnify and save harmless the Commission from all loss, costs, charges, damages and expenses, if any, arising or to arise by reason either of the construction, operation or use of the said pumping station, water mains, and water pipes or any of them.

5. The Corporation shall, during the term of this agreement, furnish service connections for the Commission's station, water tank, round houses, freight sheds and employees' houses at the Town of Cochrane, and shall supply the Commission with a continuous supply of water therefor.

6. The said supply of water shall be of a wholesome quality and suitable for all domestic and other purposes of the Commission and shall be delivered by the Corporation in sufficient quantity so as at all times to meet the reasonable demand for water not only for domestic use but for all purposes requisite for the Commission at the said Town of Cochrane.

7. The Corporation will at all times during the continuance of this agreement do all such things as may be necessary to ensure the Commission a constant supply of water of the quantity and quality hereinbefore mentioned, and with that object will from time to time enforce any statutory or other provisions or regulations for the time being in force for guarding against the pollution or fouling of the water in said Norman Lake.

8. For the purpose of measuring the amount of water supplied by the Corporation to the Commission, the Commission shall at its own expense construct and maintain and keep in good repair and working order and renew when necessary a suitable meter which shall at all reasonable times be open to the inspection and examination of the duly authorized officers of the Corporation.

9. The Commission will pay to the Corporation for all water used by the Commission under the provisions of this agreement at the rate of seven cents per thousand gallons, during the years 1913 and 1914, and at the rate of five and one-half cents per thousand gallons after the year 1914, payable quarterly on the first days of January, April, July and October in each and every year: provided always and it is hereby agreed and declared that if the Commission shall at any time hereafter be of the opinion that the said rate per thousand gallons is excessive or if and whenever any dispute or question shall arise between the Corporation and the Commission touching these presents or anything herein contained or the construction hereof of the rights, duties or liabilities of the parties hereunder, the matter in difference shall be submitted to and referred to arbitration in accordance with the provisions of the Arbitration Act or any statutory re-enactment or modification thereof for the time being in force.

10. The Commission reserves the right to fill in so much of the northerly end of the said Norman Lake as may be necessary or requisite for the construction of additional sidings for the Commission's railway south-west of the present siding leading to the Commission's coal chute, said last mentioned siding being at present used as a temporary main line of the Commission: it being understood and agreed that none of the material used by the Commission for the purpose of filling in shall be of such a character or nature as to contaminate or pollute the water of said Lake.

11. This agreement shall be determinable at the option of the Commission by the giving to the Corporation of six months' notice in writing to that effect, such notice to be left for, or mailed by registered post in an envelope addressed to the Mayor for the time being, of the said Corporation. On or before the date fixed by such notice the Corporation shall remove said pumping station, and all water mains, water pipes or other appliances running in, through upon or under the property of the said Commission and shall restore the tracks and premises of the Commission to the same condition as same would have been had pumping station, water mains, etc., not been constructed and erected, and in case of the failure of the Corporation so as to remove the same and to restore said premises as aforesaid and to make necessary repairs to said pumping station, water mains, water pipes, etc., may thereupon be taken up and removed and said premises restored as aforesaid and necessary repairs made by the Commission and the Corporation will promptly pay to the Commission all costs and expenses thereof or connected therewith as same shall be certified by the Chief Engineer for the time being of the Commission whose certificate in the premises shall be final and conclusive upon both parties.

IN WITNESS WHEREOF the parties have caused these presents to be executed under their respective corporate seals and the hands of the proper officers in that behalf the day and year first above written.

SIGNED, SEALED AND DELIVERED

E. W. HARDMAN.

A. B. ODLUM.

MUNICIPALITY OF COCHRANE.

ALLEN T. H. TAYLOR,
Mayor of Cochrane.

H. J. BROWN.
Clerk.

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.

J. L. ENGLEHART,
Chairman.

A. J. MCGEE.
Secretary-Treasurer.

MEMORANDUM OF AGREEMENT made this 27th day of August, nineteen hundred and fifteen.

BETWEEN:

THE PULLMAN COMPANY, a corporation duly organized under the laws of the State of Illinois, hereinafter called the Contractor,

—and—

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission.

WITNESSETH:

1. In this contract the word "Inspector" shall mean the Inspector for the time being appointed by the Commission to represent and act for the Commission in the supervision of the construction and in the inspection and certification of the cars herein referred to.

2. The Contractor will supply and provide all and every kind of work, labour, materials, articles and things whatsoever for the due construction and completion and will well and duly build and complete in a perfect and workmanlike manner two first class steel coaches and two baggage express cars in strict compliance with the specifications in the Contractor's tender to the Commission dated the 10th July, 1915, to the complete satisfaction of the Inspector: and the Contractor will deliver said cars completed to the Commission f.o.b. on the railway tracks at the contractor's works in Pullman, Illinois, during the month of November, 1915.

3. The Inspector shall be the sole judge of all work and material done and supplied under this contract and his decision on all questions in dispute with regard to any such work or material shall be final and the whole work shall be executed to his satisfaction as evidenced by his certificate in writing, which certificate shall be a condition precedent to the right of the Contractor to be paid therefor.

4. The Inspector and all persons from time to time authorized by him in that behalf shall have free entry and access to the works of the Contractor at all times while this contract is being performed and shall have all reasonable facilities afforded to him and his representatives as aforesaid to satisfy him that same is being carried out and performed in accordance with this contract.

5. The acceptance and payment for one or more of said cars or coaches shall not be considered as any waiver of the obligations of the Contractor with reference to the other or others of them.

6. The Commission in consideration of the premises covenants with the Contractor that the Contractor from time to time in all respects having fulfilled and performed the provisions of this contract on the Contractor's part intended to be

fulfilled and performed will be paid for and in respect of the said coaches and cars as follows: for said first class steel coaches the sum of fifteen thousand six hundred dollars each ($15,600) for said baggage and express cars the sum of nine thousand eight hundred and fifty dollars each ($9,850) making a total for all said cars of fifty thousand nine hundred dollars ($50,900) payments to be made in cash in either New York or Chicago funds on presentation of invoices upon cars being shipped after final acceptance of same by the Inspector.

IN WITNESS WHEREOF the parties have caused these presents to be executed under their respective corporate seals and under the hands of the proper officers in that behalf.

ATTEST:

By A. S. Weinsheimer,
Secretary.

THE PULLMAN COMPANY,

By John S. Runnells,
President.

A. B. Odlum.

THE TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.

By J. L. Englehart,
Chairman.

W. H. Maund,
Secretary.

MEMORANDUM OF AGREEMENT made this 12th day of December, in the year of our Lord, one thousand nine hundred and fourteen.

BETWEEN:

THE ALGOMA STEEL CORPORATION, Limited, hereinafter called the Contractor

—and—

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION, hereinafter called the Commission.

WITNESSETH:

1. The Contractor agrees to furnish and deliver to the Commission free of all charges on cars at North Bay, Ontario, as hereinafter specified, one thousand gross tons open hearth steel rails, eighty pound A.S.C.E. section, in strict compliance with American Railway Engineering Association's standard specifications for Carbon Steel Rails, as found in Appendix H. at page 375 of Volume 15, issue 1914, Proceedings of American Railway Engineering Association, boring for said rails to be in compliance with attached blue-print, showing boring of T. & N. O. R. standard angle-bar, and of date June 3rd, 1909, for the price of thirty-three dollars and fifty cents per gross ton of 2,240 pounds, f.o.b. cars North Bay, delivery to be made between the first and fifteenth day of May, 1915, time being agreed to be material and the essence of this contract.

2. In the event of stoppage or partial stoppage of the works of the Contractor, or shipments being delayed through strikes, accidents, breakage of machinery, or other cause beyond the Contractor's control (of which the Commission shall be promptly notified), or in case any shipment or any part thereof shall be lost in

transit, the Contractor shall be entitled to such additional time in respect of the whole or any part of such delivery as the Chief Engineer of the Commission for the time being shall decide, and certify in writing to be fair and reasonable, having reference to the character and duration of such stoppage, delay, or loss, and such Engineer shall be the sole and final judge as to the additional time to be allowed and as to what part of such delivery the same shall extend to, and his decision in every such case shall be absolutely final and binding upon both parties. The last preceding clause of these presents shall be construed so far as relates to any portion of such deliveries or any of them affected by such extension of time as if the time fixed by the Engineer were time fixed in such clause.

3. The Contractor shall give written notice to the Commission at its office in Toronto of the commencement of rolling at least eight days in advance of such commencement, and shall similarly give written notice to the Commission at its office in Toronto of the resuming of the work after its temporary suspension at least two clear days before such resuming.

4. The written certificate of the Inspector of the Commission provided for by said specifications certifying that the rails have been manufactured to his satisfaction in accordance with this contract, and the said specifications shall be a condition precedent to the right of the Contractor to receive and be paid the price herein agreed to be paid for the same.

5. In case default shall be made by the Contractor in delivery of any of the said rails in accordance with the terms of this contract and the continuance of such default for thirty days, the Commission may, at its option, cancel this contract, but the Contractor shall nevertheless remain liable for all loss which may be suffered by the Commission by reason of the non-completion by the Contractor of this contract, PROVIDED, HOWEVER, that credit shall be given to the Contractor notwithstanding such cancellation for the price of all rails which shall have been delivered by the Contractor in accordance with this contract and said specifications.

6. The cost of inspection provided for by the specifications shall be borne by the Commission.

7. The Commission in consideration of the premises agrees to pay in Toronto funds for each shipment of said rails upon delivery thereof on the tracks of the Commission at North Bay on presentation of invoices and certificates of the Inspector of the Commission at the Commission's office in Toronto.

IN WITNESS WHEREOF the said parties have caused these presents to be executed under their respective corporate seals and the hands of the proper officers in that behalf.

In the Presence of

F. R. IRWIN.

THE ALGOMA STEEL CORPORATION, LIMITED.

W. C. FRANZ,
Vice-President.

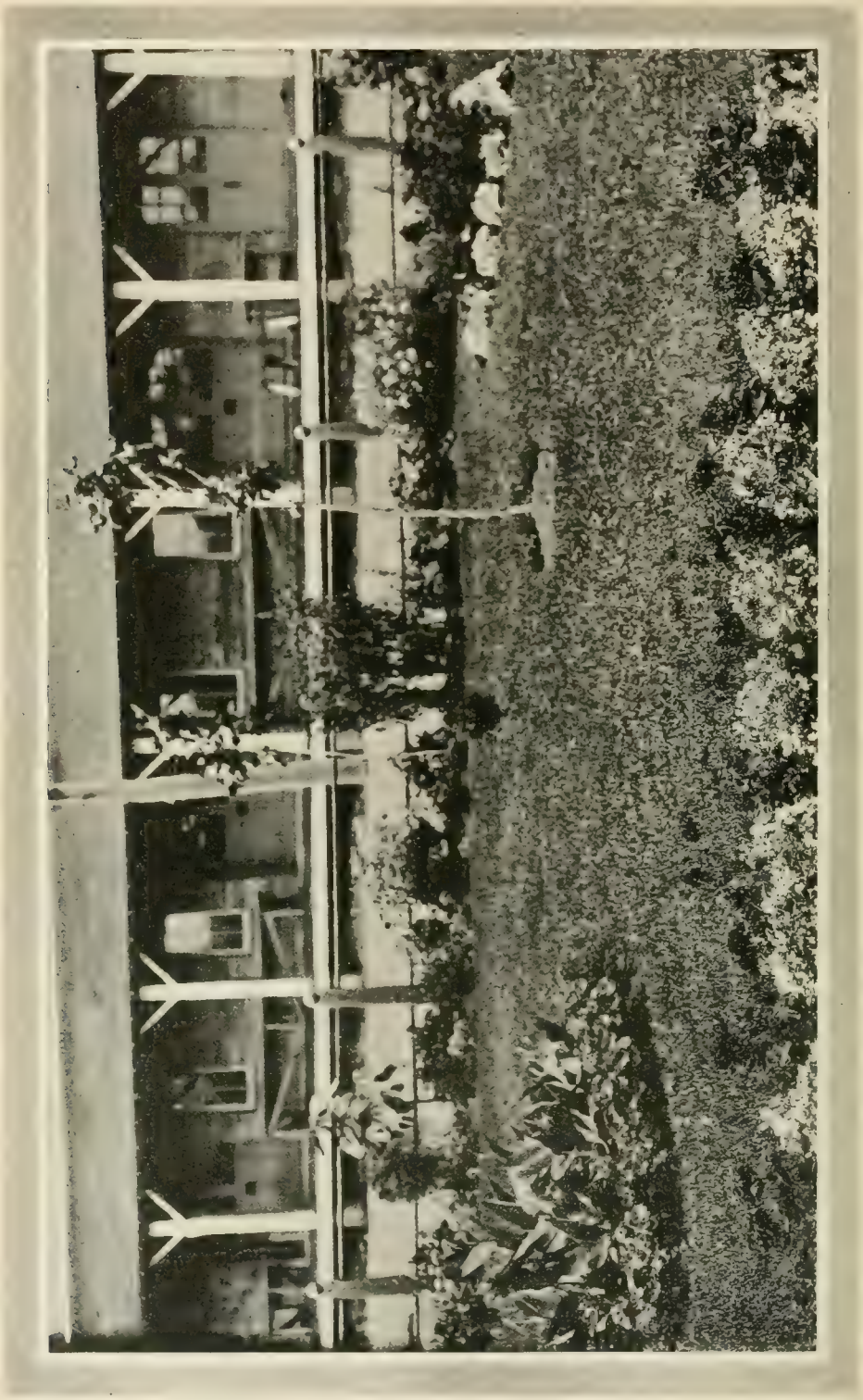
In the presence of

A. B. ODLUM.

THE TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.

J. L. ENGLEHART,
Chairman.

A. J. MCGEE,
Secretary-Treasurer.



Cobalt Market, with view of part of Station Grounds, T. & N. O. Railway, 1915.

MEMORANDUM OF AGREEMENT made in duplicate this first day of February, A.D. 1913.

BETWEEN:

THE DOME MINES COMPANY, LIMITED, hereinafter called the Applicant,

—and—

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION hereinafter called the Commission.

WHEREAS the Applicant has applied to the Commission for permission to lay certain water pipe lines along the right of way and station grounds and under the railway track of the Commission at the point and in the manner shown on the plan hereto annexed and to conduct water by means of said pipe lines to which the Commission has assented on the terms and conditions hereof.

NOW THESE PRESENTS WITNESS that it is agreed between the parties as follows:—

1. The Commission hereby consents to the Applicant laying said water pipe lines and conducting water by means thereof as shown on said plan and renewing and repairing the same subject to and upon the terms and conditions hereinafter expressed.

2. All work in connection with the laying, maintaining, renewing and repairing of the said water pipe lines and the continued supervision of the same shall be performed by and all costs and expenses thereby incurred shall be borne and paid by the applicant, but no work at any time shall be done in such a manner as to obstruct, delay or in any way interfere with the operation of the trains or traffic of the Commission or any Company using the said railway. All of said work shall be done to the satisfaction of the Chief Engineer of the Commission and shall be carried on from time to time in the manner and at the times approved by the said Chief Engineer.

3. Subject to the provisions of clause number nine hereof before any work of laying, renewing or repairing the said water pipe lines is begun, the applicant shall give to the Chief Engineer of the Commission at least forty-eight hours prior notice thereof in writing and the said Chief Engineer shall be entitled to appoint an Inspector to see that the work is performed in such a manner as shall in all respects comply with this agreement. The wages of such Inspector shall not exceed four dollars ($4.00) per day, to be paid by the applicant.

4. The applicant shall at all times maintain the said water pipe lines in good working order and condition and shall from time to time promptly repair at the cost and expense of the applicant any damage or injury which may at any time be done to the tracks, grounds or other property of the Commission by reason of the construction, renewal or use of the said water pipe lines, and in case of the failure of the applicant at any time to repair any such damage or injury the same may be restored or repaired by the Commission and the applicant will promptly pay to the Commission all costs and expense thereof or connected therewith as same shall be certified by the Chief Engineer of the Commission whose certificate shall be final and binding upon all the parties.

5. The applicant shall forthwith install and shall, so long as any of its water pipe lines cross or are upon the right-of-way or station grounds of the

Railway Commission, maintain a fire hydrant of a design approved of by the Chief Engineer of the Commission at a point to be selected by the said Chief Engineer at or near the South Porcupine station of the Commission for the purpose of fire protection, and for the supply, free of charge, of any water that may be required by the Commission for such purposes; the applicant further grants to the Commission the privilege of installing a water service connection with the pipe line of the applicant into the station buildings of the Commission at South Porcupine and the right, free of charge, to the use of all water required in said station buildings, such privileges to continue so long as any of the water pipe lines of the applicant shall cross or be upon the right of way or station grounds of the Commission. In case the applicant shall fail to install and maintain a fire hydrant as aforesaid or shall at any time be guilty of any breach of any of the provisions of this paragraph the Commission shall have the right at any time thereafter on giving not less than sixty days' notice in writing to the applicant to cancel the consent and license hereby given and upon the giving of such notice the rights of the applicant under this contract shall expire upon the date fixed by such notice and the applicant shall in that event before the arrival of such date remove the said water pipe lines so far as same shall be in, upon or under the property of the Commission and shall restore the track and premises of the Commission to the same condition as same would have been had said water pipe lines not been laid upon said premises and in case of the failure of the applicant to so remove said water pipe lines and to restore the said premises as aforesaid and make all necessary repairs the said water pipe lines may thereupon be taken up and removed and said premises restored as aforesaid and all necessary repairs made by the Commission and the applicant shall promptly pay to the Commission all the costs and expenses thereof or connected therewith as same shall be certified by the Chief Engineer whose certificate in the premises shall be final and conclusive upon the parties.

6. Should the Commission at any time during the continuance of this agreement move or change its tracks at or adjoining said point or lay any other or additional tracks, whether for sidings or otherwise, crossing said water pipe lines the applicant will at the cost and expense of the applicant make all necessary changes and do all necessary work in connection with such water pipe lines occasioned by any such change, removal or additional tracks so that such water pipe lines shall at all times be constructed and maintained in all respects to the satisfaction of the Chief Engineer for the time being of the Commission. All work in connection with any such change shall be carried on from time to time in the manner and at the times approved by the said Chief Engineer.

7. Neither the Commission, its servants or agents or any of them shall be liable directly or indirectly in respect of any injury to said water pipe lines or to any appliances or other property of the applicant connected therewith or in respect of any injury to any employee or representative of the applicant while engaged in the construction, maintenance or repair of the said water pipe lines or otherwise engaged in connection therewith on or adjoining the premises of the Commission whether any such injury or loss shall have arisen or been caused in connection with the operation of the railway of the Commission or otherwise, howsoever, or whether such injury or loss shall be caused by the negligence or default of the Commission or of any of its servants or agents or by any other cause whatever and the applicant will from time to time and at all times hereafter protect and save harmless the Commission, its servants and agents and all

its and their property from and against any claim and the costs and expenses connected therewith, made by any other party whomsoever in respect of any injury to said water pipe lines, appliances or property or in respect of any injury to any employee or representative of the applicant while engaged in the construction, maintenance, operation or repair of the said water pipe lines or otherwise engaged in connection therewith on or adjoining the premises of the Commission whether any such injury or loss to property or person shall be caused by the negligence or default of the Commission or of any of its servants or agents or by or from any other cause whatsoever.

8. Notwithstanding anything hereinbefore contained, it is agreed that should a breakdown in said pipe lines occur whereby the supply of water to the Commission is thereby interrupted and the necessity for making repairs is of such urgency that it would be impracticable to give to the Commission the 48 hours' prior notice referred to in paragraph 3 hereof, the applicant shall be at liberty to notify the Chief Engineer of the Commission by telegram of such breakdown and of the applicant's intention to proceed forthwith to do the necessary repairs and in such case having given such notice the applicant shall be at liberty to proceed with the making of such repairs subject in all respects to the terms of this agreement save as to the length of notice to be given to the Commission as provided in paragraph three hereof.

9. Notwithstanding anything herein contained it is agreed that should there be any shortage in the supply of water to be furnished the Commission hereunder or any interruption in such supply due to the non-repair of said pipe lines the applicant shall not be liable to the Commission for damages for failure to furnish such supply of water to the Commission or for such interruption so long as the applicant shall use due diligence in keeping the said pipe lines in a proper state of repair.

10. The applicant will indemnify and save harmless the Commission, its servants and agents from all loss, costs, charges, damages and expenses (if any) arising or to arise by reason of the construction or use of said water pipe lines.

11. This contract shall be binding upon and shall enure to the benefit of the executors, administrators, successors and assigns of the parties respectively.

IN WITNESS WHEREOF the parties have duly executed these presents the day and year first above written.

SIGNED, SEALED AND DELIVERED

In the presence of

D. McARTHUR as to Dome Mines Company, Limited.

A. B. ODLUM.

DOME MINES COMPANY, LIMITED.

G. R. DE RAMAR,
President.

ALEX. FASKEN,
Secretary.

TEMISKAMING AND NORTHERN ONTARIO RY. COM'N.

J. L. ENGLEHART,
Chairman.

W. H. MAUND
Secretary-Treasurer.

THIS INDENTURE made the sixteenth day of November, A.D. 1914.

IN PURSUANCE OF THE SHORT FORMS OF LEASES ACT.

BETWEEN:

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION hereinafter called the Lessor

Of the First Part

and -

ARTHUR STEVENS of the Town of Timagami in the District of Nipissing, Restaurant Keeper hereinafter called the Lessee

Of the Second Part.

WITNESSETH that in consideration of the rents, covenants and agreements hereinafter respectively reserved and contained on the part of the said Lessee his heirs, executors, administrators and assigns to be respectively paid, observed and performed the said Lessor hath demised and leased and by these presents doth demise and lease unto the said Lessee his heirs, executors, administrators and assigns ALL THAT portion of the station building of the Lessor at the Town of Timagami intended for restaurant purposes being restaurant and kitchen on the ground floor and the living apartments upstairs together with the necessary use of stairways and passageways together with all the rights, members and appurtenances whatsoever to the said premises belonging or appertaining.

TO HAVE AND TO HOLD the said hereby demised premises with their appurtenances unto the said Lessee his heirs, executors, administrators and assigns for the term of five years to be computed from the tenth day of February, 1915, and from thenceforth next ensuing and fully to be complete and ended.

YIELDING AND PAYING therefore during each and every year of the said term hereby granted unto the said Lessor its successors and assigns the sum of Seven hundred and twenty dollars ($720) to be payable monthly in advance. The first of such payments to become due and to be made on or before the 10th day of February, 1915.

The said Lessee covenants with the said Lessor, to pay rent.

And to pay taxes if any shall be imposed on the demised premises.

And to repair, reasonable wear and tear and damage by fire, lightning and tempest only excepted.

And that the said Lessor may enter and view state of repair.

And that the said Lessee will repair according to notice in writing, reasonable wear and tear and damage by fire and lightning and tempest only excepted.

And will not assign or sub-let without leave.

And will not carry on any business that shall be deemed a nuisance on said premises.

And that he will leave the premises in good repair (reasonable wear and tear and damage by fire, lightning and tempest only excepted).

PROVIDED that in the event of damage by fire, lightning or tempest rent shall cease until the premises are rebuilt.

PROVIDED that the Lessee may remove his fixtures.

THE SAID LESSEE hereby covenants and agrees with the said Lessor that in consideration of the premises and of the leasing and letting by the said Lessor to the said Lessee of the lands and premises above named for the term hereby created (and it is upon that express understanding that these presents are entered into) that notwithsanding anything contained in Section 30, of Chapter 37, 1 George V (Statutes of Ontario) or any other section of said Act or any amending Act or any Revision of said Statutes that none of the goods or chattels of said Lessee at any time during the continuance of the term hereby created on the said demised premises shall be exempt from levy by distress, for rent in arrears by said Lessee as provided for by said Section or Sections of said Act above named and that upon any claim being made for such exemption by said Lessee or on distress being made by said Lessor this Covenant and Agreement may be pleaded as an estoppel against said Lessee in any action brought to test the right to the levying upon any such goods as are named as exempted in said section or sections of said Act. Said Lessee waiving as he hereby does all and every benefit that could or might have accrued to him under and by virtue of the said section or sections of said Act but for the above covenants.

AND ALSO that if the term hereby granted shall be at any time seized or taken in execution or in attachment by any creditor of the said Lessee or if the said Lessee shall make any assignment for the benefit of creditors or becoming bankrupt or insolvent shall take the benefit of any Act that may be in force for bankrupt or insolvent debtors. The then current month's and the succeeding months' rent shall immediately become due and payable and the said term shall immediately become forfeited and void, and in such case it shall be lawful for the Lessor at any time thereafter into and upon the said demised premises or any part thereof, in the name of the whole to re-enter and the same to have again repossess and enjoy as of former estate, anything herein contained to the contrary notwithstanding.

PROVISO for re-entry by the said Lessor on non-payment of rent, or non-performance of Covenants.

The said Lessor Covenants with the said Lessee for quiet enjoyment.

The said Lessee covenants with the said Lessor that the restaurant to be conducted by him on the premises hereby demised shall be first class in every respect and the charges to be made to the public for the various articles supplied in said restaurant shall not exceed the charges made by the C. P. R. restaurant in the Town of North Bay: PROVIDED and it is hereby agreed between the parties hereto, that in the case of employees of the Lessor whose names shall be furnished to the Lessee by the Superintendent of Maintenance of the Lessor or any of them the charges to be made by the Lessee shall be reduction of not less than 30 per cent. of the charges made to ordinary customers.

AND IT IS FURTHER MUTUALLY AGREED BETWEEN THE PARTIES as follows:—

1. The said restaurant shall be subject to inspection by the Superintendent of Traffic for the time being of the Lessor who shall be the sole judge as to whether the said restaurant is being properly conducted and whether the charges made thereat by the Lessee are satisfactory.

2. The Lessor agrees to keep the snow shovelled off the platform in front of said restaurant.

3. The Lessee shall provide all necessary fuel for the purpose of heating said restaurant.

4. Any supplies which the Lessee brings into said restaurant over the Lessor's railway shall be paid for at the regular tariff rates.

5. It is understood and agreed that the Lessor shall not be liable directly or indirectly on account of any injury or loss that may at any time occur in respect of any materials, goods, chattels or other property of any kind whatsoever on the demised premises either belonging to the Lessee or otherwise in consequence of fire or sparks being communicated directly or indirectly from any of the engines or trains of the Lessor or of water being used in an endeavour to extinguish any such fire or whether such injury or loss be caused by defects in the plant or machinery of the Lessor or by the negligence of the Lessor or any of its agents or servants or otherwise howsoever. Nor shall the Lessor be liable for or in respect of any other loss of or injury to any property whatsoever at any time whatsoever on or used in connection with the demised premises whether such loss of or other injury to be caused by the negligence or default of the Lessor its agents or employees and the Lessee will hold the Lessor harmless against any claim by any person or persons whomsoever for any loss or injury for which under the provisions of these presents the Lessor shall not be liable it being hereby declared that the Assumption by the Lessee of the risk of all such injury or loss as aforesaid is one of the considerations for the execution by the Lessor of these presents and without which said execution would not have taken place.

IN WITNESS WHEREOF the Lessor has hereunto affixed its corporate seal under the hands of its proper officers in that behalf and the Lessee has hereunto affixed his hand and seal the day and year first above writtten.

SIGNED, SEALED AND DELIVERED

In the presence of

A. B. Odlum.

R. Garnet Stevens.

Temiskaming and Northern Ontario Ry Com'n.

J. L. Englehart,
Chairman.

A. J. McGee,
Secretary-Treasurer.

Arthur Stevens.

BOND No. 04677.

KNOW ALL MEN BY THESE PRESENTS that The Imperial Guarantee & Accident Insurance Company of Canada, a Corporation authorized to carry on business in the Province of Ontario is held and firmly bound unto the Temiskaming & Northern Ontario Railway Commission (hereinafter called the Commission) in the penal sum of $3,600 to be paid by the said The Imperial Guarantee & Accident Insurance Company, of Canada, its successors and assigns for which payment well and truly to be made the said The Imperial Guarantee & Accident Insurance Company, of Canada, hereby binds itself its successors and assigns forever firmly by these presents.

WHEREAS the Commission has entered into a lease bearing even date herewith with one ARTHUR STEVENS of the Town of Timagami in the District of Nipissing, copy of which is hereto annexed, covering the right to conduct a restaurant in the Commission's railway station at the Town of Timagami for the term of five years at the yearly rental of $720 payable as more particularly set out in said lease.

AND WHEREAS the said The Imperial Guarantee & Accident Insurance Company, of Canada, has agreed to guarantee the payment of the rental provided by said lease and the performance of the terms and conditions thereof.

NOW THEREFORE the condition of this obligation is such that if the said Arthur Stevens his heirs, executors or administrators shall well and fully observe and perform all the terms and conditions, covenants and agreements to be observed and performed by the said Arthur Stevens under said lease in the manner and according to the true intent and meaning of said lease and shall well and truly pay or cause to be paid the said yearly rental or sum of $720 as in said lease provided unto the Commission its successors and assigns then this obligation shall be void, otherwise the same shall remain in full force and virtue.

This bond is entered into by the said The Imperial Guarantee & Accident Insurance Company, of Canada, subject to the following conditions, viz.:—

(*a*) Upon payment of the first year's rental as in said lease provided the obligation of the said The Imperial Guarantee & Accident Insurance Company, of Canada, hereunder shall be reduced to the sum of $2,880.

(*b*) Upon payment of the second year's rental as in said lease provided the obligation of the said The Imperial Guarantee & Accident Insurance Company, of Canada, hereunder shall be reduced to the sum of $2,160.

(*c*) Upon payment of the third year's rental as in said lease provided the obligation of the said The Imperial Guarantee & Accident Insurance Company, of Canada, hereunder shall be reduced to the sum of $1,440.

(*d*) Upon payment of the fourth year's rental as in said lease provided the obligation of the said The Imperial Guarantee & Accident Insurance Company, of Canada, hereunder shall be reduced to the sum of $720.

(*e*) Upon payment of the fifth year's rental as in said lease provided the obligation of the said The Imperial Guarantee & Accident Insurance Company, of Canada, hereunder shall thereupon cease and be at an end.

IN WITNESS WHEREOF the said The Imperial Guarantee & Accident Insurance Company, of Canada, has hereunto affixed its corporate seal under the hands of its proper officers in that behalf.

SIGNED, SEALED AND DELIVERED

In the presence of

R. GARNET STEVENS.

THE IMPERIAL GUARANTEE & ACCIDENT INSURANCE CO., OF CANADA.

E. WILLANS,
Managing Director.

FRANK W. COX,
Secretary.

ARTHUR STEVENS.

THIS INDENTURE made the fourteenth day of November, A.D., 1914.

IN PURSUANCE OF THE SHORT FORMS OF LEASES ACT.

BETWEEN:

THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION hereinafter called the Lessor

Of the First Part

—and—

ARTHUR STEVENS of the Town of Timagami in the District of Nipissing, Restaurant Keeper hereinafter called the Lessee

Of the Second Part.

WITNESSETH that in consideration of the rents, covenants and agreements hereinafter respectively reserved and contained on the part of the said Lessee, his heirs, executors, administrators and assigns to be respectively paid, observed and performed the said Lessor hath demised and leased and by these presents doth demise and lease unto the said Lessee his heirs, executors, administrators and assigns ALL THAT portion of the station building of the Lessor at Englehart intended for restaurant purposes being restaurant, private dining-room and kitchen on the ground floor and living apartment upstairs consisting of five rooms together with the necessary use of stairways and passageways TOGETHER with all the rights members and appurtenances whatsoever to said premises belonging or appertaining.

TO HAVE AND TO HOLD the said hereby demised premises with their appurtenances unto the said Lessee, his heirs, executors, administrators and assigns for the term of five years to be computed from the date hereof and from thenceforth next ensuing and fully to be complete and ended.

YIELDING AND PAYING therefor during each and every year of the said term hereby granted unto the said Lessor its successors and assigns the sum of Ten hundred and eighty dollars ($1,080) to be payable monthly in advance, the first of such payments to become due and to be made on the date hereof.

The said Lessee covenants with the said Lessor to pay rent.

And to pay taxes if any shall be imposed on the demised premises.

And to repair, reasonable wear and tear and damage by fire, lightning and tempest only excepted.

And that the said Lessor may enter and view state of repair.

And that the said Lessee will repair according to notice in writing, reasonable wear and tear and damage by fire, lightning and tempest only excepted.

And will not assign or sub-let without leave.

And will not carry on any business that shall be deemed a nuisance on said premises.

And that he will leave the premises in good repair (reasonable wear and tear and damage by fire, lightning and tempest only excepted).

PROVIDED that in the event of damage by fire, lightning or tempest rent shall cease until the premises are rebuilt.

PROVIDED that the Lessee may remove his fixtures.

THE SAID LESSEE hereby covenants and agrees with the said Lessor that in consideration of the premises, and of the leasing and letting by the said Lessor to the said Lessee of the lands and premises above named for the term hereby created (and it is upon that express understanding that these presents are entered into) that notwithstanding anything contained in Section 30 of Chapter 37, 1 George V (Statutes of Ontario) or any other section of said Act or any amending Act or any Revision of said Statutes that none of the goods or chatttels of said Lessee at any time during the continuance of the term hereby created on the said demised premises shall be exempt from levy by distress for rent in arrears by said Lessee as provided for by said section or sections of said Act above named and that upon any claim being made for such exemption by said Lessee or on distress being made by the said Lessor this Covenant and Agreement may be pleaded as an estoppel against said Lessee in any action brought to test the right to levying upon any such goods as are named as exempted in said section or sections of said Act. Said Lessee waiving as he hereby does all and every benefit that could or might have accrued to him under and by virtue of the said section or sections of said Act for the above covenants.

AND ALSO that if the term hereby granted shall be at any time seized or taken in execution or in attachment by any creditor of the said Lessee or if the said Lessee shall make any assignment for the benefit of creditors or becoming bankrupt or insolvent shall take the benefit of any Act that may be in force for bankrupt or insolvent debtors. The then current month's and the succeeding months' rent shall immediately become due and payable and the said term shall im-

mediately become forfeited and void and in such case it shall be lawful for the Lessor at any time thereafter into and upon the said demised premises or any part thereof, in the name of the whole to re-enter and the same to have again repossess and enjoy as of former estate anything herein contained to the contrary notwithstanding.

PROVISO for re-entry by the said Lessor on non-payment of rent, or non-performance of covenants.

The said Lessor covenants with the said Lessee for quiet enjoyment.

The said Lessee covenants with the said Lessor that the restaurant to be conducted by him on the premises hereby demised shall be first class in every respect and the charges to be made to the public for the various articles supplied in said restaurant shall not exceed the charges made by the C. P. R. restaurant in the Town of North Bay; PROVIDED and it is hereby agreed between the parties hereto that in the case of employees of the Lessor whose names shall be furnished to the Lessee by the Superintendent of Traffic, the Chief Engineer and the Superintendent of Maintenance of the Lessor or any of them the charges to be made by the Lessee shall be reduction of not less than 30 per cent. of the charges made to ordinary customers.

AND IT IS FURTHER MUTUALLY AGREED BETWEEN THE PARTIES as follows:—

1. The said restaurant shall be subject to inspection by the Superintendent of Traffic for the time being of the Lessor who shall be the sole judge as to whether the said restaurant is being properly conducted and whether the charges made thereat by the Lessee are satisfactory.

2. The Lessor agrees to keep the snow shovelled off the platform in front of said restaurant.

3. That for the consideration aforesaid the Lessor will during said term supply said demised premises with heat in the same manner and as part of the same system of heating which shall be employed by the Lessor for the balance of said station building and will also supply necessary lighting of the same character as shall during said term be supplied for the balance of said station building and if water shall at any time during said term be supplied to said station building that such service will be extended to the demised premises.

4. Any supplies which the Lessee brings into said restaurant over the Lessor's railway shall be paid for at the regular tariff rates.

5. It is understood and agreed that the Lessor shall not be liable directly or indirectly on account of any injury or loss that may at any time occur in respect of any materials, goods, chattels or other property of any kind whatsoever on the demised premises either belonging to the Lessee or otherwise in consequence of fire or sparks being communicated directly or indirectly from any of the engines or trains of the Lessor or of water being used in an endeavour to extinguish any such fire or whether such injury or loss be caused by defects in the plant or machinery of the Lessor or by the negligence of the Lessor or any of its agents or servants or otherwise howsoever. Nor shall the Lessor be liable

for or in respect of any other loss of or injury to any property whatsoever at any time whatsoever on or used in connection with the demised premises whether such loss of or other injury to be caused by the negligence or default of the Lessor its agents or employees and the Lessee will hold the Lessor harmless against any claim by any person or persons whomsoever for any loss or injury for which under the provisions of these presents the Lessor shall not be liable it being hereby declared that the assumption by the Lessee of the risk of all such injury or loss as aforesaid is one of the considerations for the execution by the Lessor of these presents and without which said execution would not have taken place.

IN WITNESS WHEREOF the Lessor has hereunto affixed its corporate seal under the hands of its proper officers in that behalf and the Lessee has hereunto affixed his hand and seal the day and year first above written.

SIGNED, SEALED AND DELIVERED in the presence of:

A. B. ODLUM

TEMISKAMING AND NORTHERN ONTARIO RY COM'N.

J. L. ENGLEHART, *Chairman.*

A. J. McGEE, *Secretary-Treasurer.*

R. GARNET STEVENS

ARTHUR STEVENS.

BOND 04676.

KNOW ALL MEN BY THESE PRESENTS that The Imperial Guarantee & Accident Insurance Company, of Canada, a Corporation authorized to carry on business in the Province of Ontario is held and firmly bound unto the Temiskaming & Northern Ontario Railway Commission (hereinafter called the Commission) in the penal sum of $5,400 to be paid by the said The Imperial Guarantee & Accident Insurance Company, of Canada, its successors and assigns for which payment well and truly to be made the said The Imperial Guarantee & Accident Insurance Company, of Canada, hereby binds itself, its successors and assigns forever firmly by these presents.

WHEREAS the Commission has entered into a lease bearing even date herewith with one ARTHUR STEVENS of The Town of Timagami in the District of Nipissing, copy of which is hereto annexed, covering the right to conduct a restaurant in the Commission's railway station at the Town of Englehart for the term of five years at the yearly rental of $1,080 payable as more particularly set out in said lease.

AND WHEREAS the said The Imperial Guarantee and Accident Insurance Company of Canada has agreed to guarantee the payment of the rental provided by said lease and the performance of the terms and conditions thereof.

NOW THEREFORE the condition of this obligation is such that if the said Arthur Stevens, his heirs, executors or administrators shall well and fully observe and perform all the terms, conditions, covenants and agreements to be

observed and performed by the said Arthur Stevens under said lease in the manner and according to the true intent and meaning of said lease and shall well and truly pay or cause to be paid the said yearly rental or sum of $1,080 as in said lease provided unto the Commission, its successors and assigns then this obligation shall be void, otherwise the same shall remain in full force and virtue.

This bond is entered into by the said The Imperial Guarantee & Accident Insurance Company, of Canada, subject to the following conditions, viz.:—

(*a*) Upon payment of the first year's rental as in said lease provided the obligation of the said The Imperial Guarantee & Accident Insurance Company, of Canada, hereunder shall be reduced to the sum of $4,320.

(*b*) Upon payment of the second year's rental as in said lease provided the obligation of the said The Imperial Guarantee & Accident Insurance Company, of Canada, hereunder shall be reduced to the sum of $3,240.

(*c*) Upon payment of the third year's rental as in said lease provided the obligation of the said The Imperial Guarantee & Accident Insurance Company, of Canada, hereunder shall be reduced to the sum of $2,160.

(*d*) Upon payment of the fourth year's rental as in said lease provided the obligation of the said The Imperial Guarantee & Accident Insurance Company, of Canada, hereunder shall be reduced to the sum of $1,080.

(*e*) Upon payment of the fifth year's rental as in said lease provided the obligation of the said The Imperial Guarantee & Accident Insurance Company, of Canada, hereunder shall thereupon cease and be at an end.

IN WITNESS WHEREOF the said The Imperial Guarantee & Accident Insurance Company, of Canada, has hereunto affixed its corporate seal under the hands of the proper officers in that behalf.

SIGNED, SEALED AND DELIVERED in the presence:

R. GARNET STEVENS.

THE IMPERIAL GUARANTEE & ACCIDENT INSURANCE CO. OF CANADA.

E. WILLANS,
Managing Director.

FRANK W. COX,
Secretary.

ARTHUR STEVENS.

CONTRACTS EXTENDED.

Wheels and Castings.

Contract entered into with Dominion Wheel & Foundries, Ltd., dated Oct. 31st, 1914, as shown on page 479 of Annual Report for year 1914—renewed for period of one year to Oct. 31st, 1916, under same terms and conditions, with the exception that price Commission shall pay for cast iron wheels shall be $1.60 per 100 lb. instead of $1.65.

Lubricant, Oils, Grease, et al.

Contract with Galena Signal Oil Co., as shown on page 231 Eighth Annual Report for year 1909, having expired, same renewed for period of five years to April 30th, 1920.

Power House at Charlton, Ont., 1915.

NIPISSING CENTRAL RAILWAY.

RE ANNUAL REPORT, CHIEF ENGINEER AND SUPERINTENDENT OF MAINTENANCE, NIPISSING CENTRAL RAILWAY, YEAR ENDING OCTOBER 31st, 1915.

North Bay, Ont., Dec. 17th, 1915.

W. H. Maund, Esq.,

Secretary-Treasurer,

Toronto, Ontario.

Dear Sir, I beg to submit my annual report, as Chief Engineer and Superintendent of Maintenance, for the fiscal year ending October 31st, 1915.

Additions and Betterments

During the year, there has been no additional track laid and no additional equipment purchased.

A small shelter station was erected at the crossing of the road between the Townships of Coleman and Bucke.

Maintenance.

The property of the railway, including roadbed, track buildings, electrical equipment and rolling stock has all been maintained in good condition.

The mileage now operated is as follows:—

Main Track:

Owned and maintained by Company	4.82 miles	
Leased from T. & N. O. Commission:		
Maintained by Company	5.28 miles	
Maintained by Commission	5.27 miles	
Total Main Track		15.37 miles

Sidings and Spurs:

Company Spurs	3.45 miles	
Private Spurs	1.11 miles	
Total Sidings and Spurs		4.56 miles
Total Track		19.93 miles

Respectively submitted,

S. B. Clement.

MEMORANDUM OF AGREEMENT made this 21st day of September, 1915.

BETWEEN:

NIPISSING CENTRAL RAILWAY COMPANY hereinafter called the Company

Of the First Part

—and—

THE CANADIAN STREET CAR ADVERTISING COMPANY, LIMITED hereinafter called the Contractor

Of the Second Part.

WHEREAS the Contractor has applied to the Company for a lease of the advertising privileges in the interior of the electric street cars now being operated by the Company to which the Company has agreed subject to and upon the terms and conditions hereinafter set forth.

1. The Company hereby leases to the Contractor for the term of ten years to be computed from the first day of October, 1915, the sole and exclusive advertising rights and privileges on the regular advertising panels in the interior of all the electric street cars now or hereafter owned or operated by the Company.

2. The Contractor shall pay to the Company as rental for said privileges the sum of Five hundred dollars ($500) per year (together with the further rental as hereinafter provided) payable in advance in equal consecutive quarterly instalments on the first days of January, April, July and October in each and every year, the first of such instalments to be paid on the first day of October, 1915.

3. It is understood and agreed between the parties hereto that in case the Company shall at any time during the currency of this agreement operate more than ten closed electric cars the Contractor shall pay to the Company in addition to the above rental of Five hundred dollars ($500) per year a further rental of fifty dollars ($50) per year for each and every closed electric car operated by the Company in excess of ten.

4. All advertisements to be placed in said electric cars under this agreement shall be of a moral and reputable character and in that respect the placing of same in said cars shall be subject to the approval of the general manager for the time being of the Company who shall be the sole judge as to whether such advertisements are of a moral and reputable character and otherwise free from objection.

5. The Company reserves the right to place dodgers, pamphlets and other advertising matter relating to its own business inside said electric street cars provided same does not interfere with the regular advertisements placed in said cars by the Contractor under this agreement.

6. In case default is made by the contractor in any of the payments payable hereunder and such default shall continue for a period of thirty days after written demand for payment shall have been made upon the Contractor by mailing a

prepaid registered letter addressed to the Contractor at Montreal, Quebec, the Company shall have the right to terminate this agreement without further notice to the Contractor and to move all advertising matter from said electric cars and upon such termination the contractor's rights hereunder shall thereupon cease and be at an end.

7. The Contractor may place advertisements in advertising racks or moulding similar to those generally used by the Contractor, such racks or mouldings to be supplied by the Company and placed in position by the Company except in cases where the cars have already been equipped by the builders.

8. This agreement shall not be assigned or transferred by the Contractor without first having obtained the consent in writing of the Company so to do.

This agreement and everything herein contained shall ensure to the benefit of and be binding upon the parties hereto, their successors and assigns respectively.

IN WITNESS WHEREOF the parties hereto have hereunto affixed their respective corporate seals under the hands of their proper officers in that behalf.

SIGNED, SEALED AND DELIVERED.

In the presence of:

A. B. Odlum.

Nipissing Central Railway.

J. L. Englehart,
President.

W. H. Maund,
Secretary-Treasurer.

The Canadian Street Car Advertising Co., Limited.

W. G. Carrique,
President.

Blanche River, looking North from T. & N. O. Railway Bridge, near Englehart.

GENERAL BALANCE SHEET

ASSETS.

Property Owned:		
Cost of Road as of Oct. 31st, 1914.....	$296,172 09	
Cost of Road for year ended Oct. 31st, 1915	2,643 61	
		$298,815 70
Cost of Equipment as of Oct. 31st, 1914..	$73,460 19	
Cost of Equipment for year ended Oct. 31st, 1915	830 79	
		74,290 98
Townsite Property—North Cobalt		244,197 75
Working Assets:		
Cash	$44,381 85	
Accounts Collectible	3,962 02	
Bills Receivable	157 36	
Balance due on Townsite Sales	10,824 22	
Balance due from Agents and Conductors	491 86	
Material on hand	2,773 92	
		62,591 23
Deferred Debit Items:		
Insurance paid in advance		48 20
Other Assets:		
Franchise		141,383 32
		$821,327 18

LIABILITIES.

Capital Stock		$530,000 00
Advance by T. & N. O. Railway Commission		229,194 16
Working Liabilities:		
Accounts Payable	$60,124 93	
Unclaimed Wages	126 51	
War Tax held available	4 55	
		60,255 99
Free Surplus:		
Profit and Loss Balance		1,877 03
		$821,327 18

PROFIT AND LOSS.

Townsite Balance	$2,382 03	By Balance—October 31st, 1914	$27,397 97
Interest on Moneys advanced (T. & N. O. Ry.)	23,233 90		
Paid Treasurer of Ontario	25,000 00	By Net Revenue from Operation	25,094 99
Balance Carried Forward	1,877 03		
	$52,492 96		$52,492 96

NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures

No.	RECEIPTS	Per cent.	1913 November	Per cent.	1914 November
	I. Revenue from Transportation—		$ c.		$ c.
1	Passenger Revenue	.....	7,485 62	.....	7,516 90
2	Baggage Revenue	.....	18 25	.....	35 05
3	Parlor, Chair and Special Car Revenue	.....	45 00	.....	21 00
4	Mail Revenue	.....	.....	.....	.....
5	Express Revenue	.....	.....	.....	.....
6	Milk Revenue	.....	44 45	.....	27 30
7	Freight Revenue	.....	.....	.....	420 38
8	Switching Revenue	.....	140 77	.....	580 29
9	Miscellaneous Transportation Revenue	.....	.....	.....	.....
	Totals	.....	7,734 09	.....	8,600 92
	II. Revenue from Operations other than Transportation—				
10	Station and Train Privileges	.....	137 36	.....	.....
11	Parcel Room Receipts	.....	.....	.....	.....
12	Storage	.....	.....	.....	.....
13	Car Service Demurrage	.....	15 00	.....	49 00
14	Telegraph and Telephone Service	.....	.....	.....	.....
15	Rents of Tracks and Terminals	.....	.....	.....	.....
16	Rent of Equipment	.....	.....	.....	.....
17	Rents of Buildings and other Property	.....	.....	.....	.....
18	Power	.....	.....	.....	.....
19	Miscellaneous	.....	.....	.....	.....
	Totals	.....	152 36	.....	49 00
	Total Revenue	.....	7,886 45	.....	8,649 92
	EXPENDITURES				
1	Maintenance of Way and Structures	9.7	766 38	15.6	1,347 31
2	Maintenance of Equipment	3.1	242 18	4.8	414 04
3	Traffic Expenses	.7	52 40	.6	48 80
4	Transportation Expenses	38.8	3,062 01	44.1	3,817 09
5	General and Miscellaneous	20.9	1,651 19	15.6	1,350 62
	Total Operating Expenses	73.2	5,774 16	80.7	6,977 86
	Balance	.....	2,112 29	.....	1,672 06
	Other Income—				
	Interest	.....	.....	.....	.....
	Hire of Equipment	.....	.....	.....	.....
	Totals	.....	2,112 29	.....	1,672 06
	Deductions from Income—				
	Rent for Lease of Road	.....	.....	.....	.....
	Taxes	.....	.....	.....	27 19
	Hire of Equipment	.....	.....	.....	.....
	Net Result	.....	2,112 29	.....	1,644 87

RAILWAY

by Months, November, 1913, to October, 1915.

Per Cent.	1913 December	Per Cent.	1914 December	Per cent.	1914 January	Per Cent.	1915 January	No.
	$ c.		$ c.		$ c.		$ c.	
.....	7,790 05	.....	7,775 75	.....	6,841 10	.....	7,121 33	1
.....	17 75	.....	31 25	.....	12 50	.....	24 25	2
.....	35 00	.....	39 00	.....	57 50	.....	25 00	3
.....	.....	.....	.....	.....	.....	.....	.....	4
.....	.....	.....	.....	.....	.....	.....	.....	5
.....	68 10	.....	27 10	.....	4 80	.....	14 06	6
.....	.....	.....	398 48	.....	.....	.....	731 12	7
.....	230 54	.....	555 30	.....	439 01	.....	394 01	8
.....	.....	.....	.....	.....	.....	.....	.....	9
.....	8,141 44	.....	8,826 88	.....	7,354 91	.....	8,309 77	
.....	13 60	.....	.....	.....	11 99	.....	65 83	10
.....	.....	.....	.....	.....	.....	.....	.....	11
.....	.....	.....	.....	.....	.....	.....	.....	12
.....	4 00	.....	84 00	.....	6 00	.....	42 00	13
.....	.....	.....	.....	.....	.....	.....	.....	14
.....	.....	.....	.....	.....	.....	.....	186 00	15
.....	.....	.....	.....	.....	.....	.....	.....	16
.....	.....	.....	.....	.....	.....	.....	.....	17
.....	.....	.....	.....	.....	.....	.....	.....	18
.....	.....	.....	.....	.....	.....	.....	.....	19
.....	17 60	.....	84 00	.....	17 99	.....	293 83	
.....	8,159 04	.....	8,910 88	.....	7,372 90	.....	8,603 60	
6.1	496 94	15.7	1,403 52	11.5	849 74	8.9	763 16	1
5.9	478 20	6.6	587 12	8.2	604 06	9.5	818 29	2
.6	52 40	.7	65 60	.6	41 20	.5	43 20	3
36.3	2,959 19	49.4	4,400 92	44.9	3,310 13	47.3	4,071 93	4
20.2	1,654 21	Cr. 1.7	Cr. 152 72	23.3	1,720 08	5.5	467 76	5
69.1	5,640 94	70.7	6,304 44	88.5	6,525 21	71.7	6,164 34	
.....	2,518 10	.....	2,606 44	.....	847 69	.....	2,439 26	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	2,518 10	.....	2,606 44	.....	847 69	.....	2,439 26	
.....	.....	.....	1,209 18	.....	.....	.....	604 58	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	2,518 10	.....	1,397 26	.....	847 69	.....	1,834 68	

NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures

No.	RECEIPTS.	Per cent.	1914 February	Per cent.	1915 February	Per cent.	1914 March
	I. Revenue from Transportation—		$ c.		$ c.		$ c.
1	Passenger Revenue		6,103 65		6,537 20		7,422 95
2	Baggage Revenue		10 50		23 00		12 50
3	Parlor, Chair and Special Car Revenue		65 00		65 00		15 00
4	Mail Revenue						
5	Express Revenue						
6	Milk Revenue		1 20		8		39 20
7	Freight Revenue				617 08		
8	Switching Revenue		385 61		195 59		583 99
9	Miscellaneous Transportation Revenue						
	Totals		6,565 96		7,437 95		8,073 64
	II. Revenue from Operations other than Transportation—						
10	Station and Car Privileges		14 96		65 84		35 36
11	Parcel Room Receipts						
12	Storage						
13	Car Service Demurrage				57 00		4 00
14	Telegraph and Telephone Service						
15	Rents of Tracks and Terminals		186 00				
16	Rent of Equipment						
17	Rents of Buildings and other Property						
18	Power						
19	Miscellaneous						
	Totals		200 96		122 84		39 36
	Total Revenue		6,766 92		7,560 79		8,113 00
	EXPENDITURES.						
1	Maintenance of Way and Structures	13.6	922 66	17.4	1,316 85	16.8	1,359 01
2	Maintenance of Equipment	5.4	362 11	10.9	823 61	6.8	552 15
3	Traffic Expenses	.9	60 40	.2	11 20	.7	58 00
4	Transportation Expenses	45.4	3,072 95	53.9	4,073 64	40.8	3,312 96
5	General and Miscellaneous	24.5	1,658 82	8.3	631 82	24.6	1,993 93
	Total Operating Expenses	89.8	6,076 94	90.7	6,857 12	89.7	7,276 05
	Balance		689 98		703 67		836 95
	Other Income—						
	Interest						
	Hire of Equipment						
	Totals		689 98		703 67		836 95
	Deductions from Income—						
	Rent for Lease of Road				604 58		
	Taxes						
	Hire of Equipment						55 35
	Net Result		689 98		99 09		781 60

RAILWAY—Continued

by months, November, 1913, to October, 1915.

Per cent.	1915 March	Per cent.	1914 April	Per cent.	1915 April	Per cent.	1914 May	No.
	$ c.		$ c.		$ c.		$ c.	
.....	7,484 25	.....	8,032 85	.....	7,739 65	.....	8,781 89	1
.....	25 75	.....	16 40	.....	36 75	.....	32 55	2
.....	20 00	.....	30 00	.....	60 00	.....	70 00	3
.....	.....	.....	.....	.....	.....	.....	.....	4
.....	.....	.....	.....	.....	.....	.....	.....	5
.....	53	.....	56 01	.....	23 03	.....	61 12	6
.....	655 32	.....	.....	.....	364 04	.....	.....	7
.....	401 37	.....	523 05	.....	523 12	.....	540 51	8
.....	.....	.....	.....	.....	.....	.....	.....	9
.....	8,587 22	.....	8,658 31	.....	8,746 59	.....	9,486 07	
.....	46 10	.....	161 59	.....	59 25	.....	28 56	10
.....	.....	.....	.....	.....	.....	.....	.....	11
.....	.....	.....	.....	.....	.....	.....	.....	12
.....	142 00	.....	5 00	.....	76 00	.....	5 00	13
.....	.....	.....	.....	.....	.....	.....	.....	14
.....	.....	.....	.....	.....	Dr. 46 00	.....	.....	15
.....	.....	.....	.....	.....	.....	.....	.....	16
.....	.....	.....	.....	.....	.....	.....	.....	17
.....	.....	.....	.....	.....	.....	.....	.....	18
.....	.....	.....	.....	.....	.....	.....	.....	19
.....	188 10	.....	166 59	.....	89 25	.....	33 56	
.....	8,775 32	.....	8,824 90	.....	8,835 84	.....	9,519 63	
14.9	1,303 28	12.8	1,129 78	11.7	1,030 82	10.5	999 77	1
6.8	595 30	5.7	499 47	6.4	561 74	5.2	499 72	2
.....	.....	.8	74 80	.6	57 40	.6	52 40	3
44.7	3,924 51	36.5	3,219 48	45.1	3,984 22	33.7	3,211 91	4
8.3	731 40	18.8	1,661 54	9.4	830 98	23.4	2,227 63	5
74.7	6,554 49	74.6	6,585 07	73.2	6,465 16	73.4	6,991 43	
.....	2,220 83	.....	2,239 83	.....	2,370 68	.....	2,528 20	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	.....	.....	.....	.....	305 10	
.....	2,220 83	.....	2,239 83	.....	2,370 68	.....	2,833 30	
.....	604 58	.....	.....	.....	604 58	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	.....	.....	249 75	.....	.....	.....	.....	
.....	1,616 25	.....	1,990 08	.....	1,766 10	.....	2,833 30	

NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures

No.	RECEIPTS	Per cent.	1915 May	Per cent.	1914 June	Per cent.	1915 June
	I. Revenue from Transportation—		$ c.		$ c.		
1	Passenger Revenue	.....	8,006 00	.....	9,213 75	.....	8,029 27
2	Baggage Revenue	.....	57 25	.....	45 00	.....	53 25
3	Parlor, Chair and Special Car Revenue	.....	30 00	.....	67 50	.....	60 00
4	Mail Revenue	.....	.....	.....	.....	.....	.....
5	Express Revenue	.....	.....	.....	.....	.....	.....
6	Milk Revenue	.....	34 43	.....	11 56	.....	9 15
7	Freight Revenue	.....	302 88	.....	.....	.....	259 27
8	Switching Revenue	.....	552 53	.....	632 08	.....	680 30
9	Miscellaneous Transportation Revenue	.....	.....	.....	.....	.....	.....
	Totals	.....	8,983 09	.....	9,969 89	.....	9,091 24
	II. Revenue from Operations other than Transportation—						
10	Station and Car Privileges	.....	6 38	.....	50 66	.....	29 07
11	Parcel Room Receipts	.....	.....	.....	.....	.....	.....
12	Storage	.....	.....	.....	.....	.....	.....
13	Car Service Demurrage	.....	45 00	.....	12 00	.....	58 00
14	Telegraph and Telephone Service	.....	.....	.....	.....	.....	.....
15	Rents of Tracks and Terminals	.....	.....	.....	.....	.....	.....
16	Rent of Equipment	.....	.....	.....	.....	.....	.....
17	Rents of Buildings and other Property	.....	.....	.....	.....	.....	.....
18	Power	.....	.....	.....	.....	.....	.....
19	Miscellaneous	.....	.....	.....	.....	.....	.....
	Totals	.....	51 38	.....	62 66	.....	87 07
	Total Revenue	.....	9,034 47	.....	10,032 55	.....	9,178 31
	EXPENDITURES						
1	Maintenance of Way and Structures	9.4	848 06	10.5	1,052 20	10.2	932 30
2	Maintenance of Equipment	6.8	615 13	4.6	456 69	3.2	297 79
3	Traffic Expenses	.8	75 79	.7	74 80	.4	33 60
4	Transportation Expenses	39.1	3,535 90	32.6	3,273 92	38.	3,487 18
5	General and Miscellaneous	13.1	1,178 47	16.7	1,674 13	7.9	729 99
	Total Operating Expenses	69.2	6,253 35	65.1	6,531 74	59.7	5,480 86
	Balance	.....	2,781 12	.....	3,500 81	.....	3,697 45
	Other Income—						
	Interest	.....	.....	.....	.....	.....	.....
	Hire of Equipment	.....	.....	.....	.....	.....	.....
	Totals	.....	2,781 12	.....	3,500 81	.....	3,697 45
	Deductions from Income—						
	Rent for Lease of Road	.....	604 58	.....	.....	.....	604 58
	Taxes	.....	.....	.....	.....	.....	.....
	Hire of Equipment	.....	.....	.....	.....	.....	.....
	Net Result	.....	2,176 54	.....	3,500 81	.....	3,092 87

RAILWAY—Continued.

by Months, November 1913, to October 1915.

Per cent.	1914 July	Per cent.	1915 July	Per cent.	1914 August	Per cent.	1915 August	No.
	$ c.		$ c.		$ c.		$ c.	
.....	10,802 62	.....	8,965 10	.....	9,834 70	.....	7,992 92	1
.....	69 00	.....	77 50	.....	56 90	.....	49 50	2
.....	32 50	.....	40 00	.....	15 00	.....	35 00	3
.....	.....	.....	.....	.....	.....	.....	.....	4
.....	.....	.....	.....	.....	.....	.....	.....	5
.....	9 93	.....	16	.....	2 70	.....	38	6
.....	.....	.....	188 02	.....	218 06	.....	323 16	7
.....	615 59	.....	1,009 61	.....	799 35	.....	1,041 29	8
.....	.....	.....	.....	.....	.....	.....	.....	9
.....	11,529 64	.....	10,280 39	.....	10,926 71	.....	9,442 25	
.....	14 71	.....	14 28	.....	.....	.....	42 38	10
.....	.....	.....	.....	.....	.....	.....	.....	11
.....	.....	.....	.....	.....	.....	.....	.....	12
.....	23 00	.....	1 00	.....	23 00	.....	2 00	13
.....	.....	.....	.....	.....	.....	.....	.....	14
.....	.....	.....	.....	.....	.....	.....	.....	15
.....	.....	.....	.....	.....	.....	.....	.....	16
.....	.....	.....	.....	.....	.....	.....	.....	17
.....	.....	.....	.....	.....	.....	.....	.....	18
.....	.....	.....	.....	.....	2.57	.....	.....	19
.....	37 71	.....	15 28	.....	25 57	.....	44 38	
.....	11,567 35	.....	10,295 67	.....	10,952 28	.....	9,486 63	
11.9	1,377 04	10.	1,031 73	10.8	1,187 08	10.8	1,021 02	1
3.9	451 84	2.9	302 34	4.	435 03	3.	281 96	2
.4	43 20	.3	28 00	1.	109 44	.5	49 20	3
30.9	3,578 74	36.6	3,767 03	32.9	3,601 74	37.3	3,542 23	4
18.8	2,177 50	6.6	681 60	15.9	1,738 95	8.8	836 62	5
65.9	7,628 32	56.4	5,810 70	64.6	7,072 24	60.4	5,731 03	
.....	3,939 03	.....	4,484 97	.....	3,880 04	.....	3,755 60	
.....	.....	.....	.....	.....	.....	.....	16 45	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	3,939 03	.....	4,484 97	.....	3,880 04	.....	3,772 05	
.....	.....	.....	604 58	.....	.....	.....	604 58	
.....	.....	.....	.....	.....	15 00	.....	.....	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	3,939 03	.....	3,880 39	.....	3,865 04	.....	3,167 47	

NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures

No.	RECEIPTS	Per cent.	1914 September	Per cent.	1915 September	Per cent.	1914 October
	I. Revenue from Transportation—		$ c.		$ c.		$ c.
1	Passenger Revenue		8,335 80		7,160 85		8,316 75
2	Baggage Revenue		43 90		40 50		38 50
3	Parlor, Chair and Special Car Revenue		25 00		30 00		10 00
4	Mail Revenue						
5	Express Revenue						
6	Milk Revenue		3 40		3 00		4 55
7	Freight Revenue		186 99		353 47		609 15
8	Switching Revenue		866 12		961 63		785 25
9	Miscellaneous Transportation Revenue						
	Totals		9,461 21		8,549 45		9,764 20
	II. Revenue from Operations other than Transportation—						
10	Station and Car Privileges		46 24		18 00		
11	Parcel Room Receipts						
12	Storage						
13	Car Service Demurrage		30 00		42 00		56 00
14	Telegraph and Telephone Service						
15	Rents of Tracks and Terminals						
16	Rent of Equipment						
17	Rents of Buildings and other Property						
18	Power						
19	Miscellaneous						
	Totals		76 24		60 00		56 00
	Total Revenue		9,537 45		8,609 45		9,820 20
	EXPENDITURES						
1	Maintenance of Way and Structures	13.	1,243 36	10.2	880 83	16.2	1,590 26
2	Maintenance of Equipment	10.4	990 57	5.2	444 51	6.1	597 89
3	Traffic Expenses	.5	48 80	.3	28 00	.6	54 40
4	Transportation Expenses	41.2	3,932 92	40.6	3,498 94	47.2	4,640 82
5	General and Miscellaneous	21.2	2,014 80	9.	776 20	18.7	1,834 30
	Total Operating Expenses	86.3	8,230 45	65.3	5,628 48	88.8	8,717 67
	Balance		1,307 00		2,980 97		1,102 53
	Other Income—						
	Interest				92 90		
	Hire of Equipment						
	Total		1,307 00		3,073 87		1,102 53
	Deductions from Income—						
	Rent for Lease of Road				604 58		
	Taxes						
	Hire of Equipment						
	Net Results		1,307 00		2,469 29		1,102 53

RAILWAY—Continued.

by Months, November, 1913, to October, 1915.

Per cent.	1915 October	Per cent.	1914 Total	Per cent.	1915 Total	Increase	Decrease	No.
	$ c.		$ c.		$ c.	$ c.	$ c.	
.....	7,293 30	.....	98,961 73	.....	91,622 52	.....	7,339 21	1
.....	28 00	.....	373 75	.....	482 05	108 30	.....	2
.....	45 00	.....	467 50	.....	470 00	2 50	.....	3
.....	.....	.....	.....	.....	.....	.....	.....	4
.....	.....	.....	.....	.....	.....	.....	.....	5
.....	9 00	.....	307 02	.....	148 22	.....	158 80	6
.....	261 01	.....	1,014 20	.....	4,874 23	3,860 03	.....	7
.....	966 43	.....	6,541 87	.....	7,861 47	1,319 60	.....	8
.....	.....	.....	.....	.....	.....	.....	.....	9
.....	8,602 74	.....	107,666 07	.....	105,458 49	.....	2,207 58	
.....	152 00	.....	515 03	.....	499 13	.....	15 90	10
.....	.....	.....	.....	.....	.....	.....	.....	11
.....	.....	.....	.....	.....	.....	.....	.....	12
.....	15 00	.....	183 00	.....	613 00	430 00	.....	13
.....	.....	.....	.....	.....	.....	.....	.....	14
.....	.....	.....	186 00	.....	140 00	.....	46 00	15
.....	.....	.....	.....	.....	.....	.....	.....	16
.....	.....	.....	.....	.....	.....	.....	.....	17
.....	.....	.....	.....	.....	.....	.....	.....	18
.....	.....	.....	2 57	.....	.....	.....	2 57	19
.....	167 00	.....	886 60	.....	1,252 13	365 53	.....	
.....	8,769 74	.....	108,552 67	.....	106,710 62	.....	1,842 05	
10.6	930 92	11.9	12,974 22	12.0	12,809 80	.....	164 42	1
12.5	1,098 89	5.7	6,169 91	6.4	6,840 72	670 81	.....	2
.4	33 60	.7	722 24	.5	474 39	.....	247 85	3
40.9	3,585 85	37.9	41,176 77	42.8	45,689 44	4,512 67	.....	4
7.7	674 37	20.3	22,007 08	8.2	8,737 11	.....	13,269 97	5
72.1	6,323 63	76.5	83,050 22	69.9	74,551 46	.....	8,498 76	
.....	2,446 11	.....	25,502 45	.....	32,159 16	6,656 71	.....	
.....	108 65	.....	.....	.....	218 00	218 00	.....	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	2,554 76	.....	25,502 45	.....	32,377 16	6,874 71	.....	
.....	604 58	.....	.....	.....	7,254 98	7,254 98	.....	
.....	.....	.....	15 00	.....	27 19	12 19	.....	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	1,950 18	.....	25,487 45	.....	25,094 99	.....	392 46	

NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures, by

No.	Maintenance of Way and Structures.	November, 1913	November, 1914	December 1913	December, 1914
		$ c.	$ c.	$ c.	$ c.
1	Superintendence of way and structures	30 00	32 00	30 00	32 00
2	Ballast	.....	15 22	.....	28 00
3	Ties	.....	.....	.....	79 34
4	Rails	Cr. 2 50	.....	.....	102 66
5	Rail fastenings and joints	.....	.....	.....	9 34
6	Special work	.....	22 39	.....	9 34
7	Underground construction	.....	.....	.....	.....
8	Roadway and track labor	334 28	450 88	215 55	506 15
9	Paving	.....	22 79	73 52	.....
10	Miscellaneous roadway and track expenses	2 20	2 87	14 48	11 55
11	Cleaning and sanding track	2 28	17 10	95	14 25
12	Removal of snow, ice and sand	45 48	51 81	192 22	279 15
13	Tunnels	.....	.....	.....	.....
14	Elevated structures and foundations	.....	.....	.....	.....
15	Bridges, trestles and culverts	162 49	.....	96 00	.....
16	Crossings, fences, cattle guards and signs	.....	24 86	Cr. 219 01	7 97
17	Signal and interlocking systems	.....	.....	.....	.....
18	Telephone and telegraph systems	4 15	28 00	84	24 49
19	Other miscellaneous way expenses	.....	.....	.....	.....
20	Poles and fixtures	57 68	130 50	30 05	65 00
21	Underground conduits	.....	.....	.....	.....
22	Transmission system	.....	33 00	.....	40 85
23	Distribution system	130 32	160 40	22 15	111 39
24	Miscellaneous electric line expenses	.....	.....	.....	.....
25	Buildings and structures	.....	355 49	40 19	82 04
26	Depreciation of way and structures	.....	.....	.....	.....
27	Other operations .....Dr	.....	.....	.....	.....
28	Other operations .....Cr.	.....	.....	.....	.....
	Total	766 38	1,347 31	496 94	1,403 52

No.	Maintenance of Equipment.				
29	Superintendence of equipment	30 00	32 00	30 00	36 50
30	Power plant equipment	5 10	.....	30 79	.....
31	Substation equipment	.....	.....	.....	.....
32	Passenger and combination cars	167 43	179 40	202 43	304 32
33	Freight, express and mail cars	1 75	.....	.....	.....
34	Locomotives	.....	.....	.....	.....
35	Service cars	4 90	.....	4 20	.....
36	Electric equipment of cars	32 15	199 77	206 62	226 33
37	Electric equipment of locomotives	.....	.....	.....	.....
38	Shop machinery and tools	.....	.....	.....	.....
39	Shop expenses	85	2 87	4 16	19 97
40	Horses and vehicles	.....	.....	.....	.....
41	Other miscellaneous equipment expenses	.....	.....	.....	.....
42	Depreciation of equipment	.....	.....	.....	.....
43	Other operations .....Dr.	.....	.....	.....	.....
44	Other operations .....Cr.	.....	.....	.....	.....
	Total	242 18	414 04	478 20	587 12

RAILWAY.

Months, November 1st, 1913, to October 31st, 1915—Continued.

January, 1914	January, 1915	February, 1914	February, 1915	March, 1914	March, 1915	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
30 00	32 00	30 00	16 00	30 00	16 00	1
.....	14 00	.....	14 00	.....	14 00	2
.....	39 67	3 15	39 67	.....	39 67	3
.....	51 33	.....	51 33	159 11	51 33	4
.....	4 67	.....	4 67	.....	21 49	5
.....	4 67	29 10	4 67	344 77	117 31	6
.....	.....	.....	.....	.....	.....	7
405 97	238 72	306 03	270 01	415 86	330 94	8
.....	.....	27 78	.....	30 00	.....	9
95	6 18	1 32	4 57	.....	3 58	10
.....	.....	.....	.....	.....	6 65	11
278 60	354 59	325 65	323 02	157 53	211 89	12
.....	.....	.....	.....	.....	.....	13
.....	.....	.....	.....	.....	.....	14
96 00	.....	109 69	137 44	108 50	.....	15
.....	.....	.....	.....	.....	.....	16
.....	.....	.....	.....	.....	.....	17
1 [illegible]9	34 00	6 02	21 00	.....	18 00	18
.....	.....	.....	.....	.....	.....	19
2 [illegible]5	67 87	30	59 16	12 52	75 00	20
.....	.....	.....	.....	.....	.....	21
24 22	31 60	20 70	89 60	14 65	51 47	22
9 60	124 00	62 92	77 00	86 07	174 17	23
.....	.....	.....	.....	.....	.....	24
75	Cr. 239 54	.....	204 71	.....	171 68	25
.....	.....	.....	.....	.....	.....	26
.....	.....	.....	.....	.....	.....	27
.....	.....	.....	.....	.....	.....	28
849 74	763 16	922 66	1,316 85	1,359 01	1,303 28	
34 50	58 10	30 00	16 00	30 00	16 00	29
86 25	.....	5 15	.....	.....	.....	30
.....	119 10	60 00	173 75	126 87	.....	31
433 38	488 69	167 56	481 42	169 89	492 58	32
.....	.....	.....	.....	.....	.....	33
.....	.....	.....	.....	.....	.....	34
.....	.....	.....	.....	.....	.....	35
47 35	127 31	20 53	131 18	95 47	74 71	36
.....	.....	.....	.....	.....	.....	37
70	.....	.....	.....	3 60	.....	38
1 88	25 09	78 87	21 26	126 32	12 01	39
.....	.....	.....	.....	.....	.....	40
.....	.....	.....	.....	.....	.....	41
.....	.....	.....	.....	.....	.....	42
.....	.....	.....	.....	.....	.....	43
.....	.....	.....	.....	.....	.....	44
604 06	818 29	362 11	823 61	552 15	595 30	

NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures, by

No.	Maintenance of Way and Structures.	April, 1914	April, 1915	May, 1914	May, 1915
		$ c.	$ c.	$ c.	$ c.
1	Superintendence of way and structures	30 00	16 00	30 00	16 00
2	Ballast	114 74	14 00	.....	14 00
3	Ties	.....	39 67	.....	39 67
4	Rails	.....	51 33	.....	51 33
5	Rail fastenings and joints	6 76	4 67	.....	11 69
6	Special work	.....	4 67	.....	4 67
7	Underground construction	.....	.....	.....	.....
8	Roadway and track labor	623 63	407 01	474 28	489 02
9	Paving	30 00	.....	Cr. 69 56	.....
10	Miscellaneous roadway and track expenses	5 45	3 77	.....	3 13
11	Cleaning and sanding track	37 05	18 05	32 30	24 57
12	Removal of snow, ice and sand	12 28	32 81	31 64	.....
13	Tunnels	.....	.....	.....	.....
14	Elevated structures and foundations	.....	.....	.....	.....
15	Bridges, trestles and culverts	108 50	173 72	108 50	.....
16	Crossings, fences, cattle guards and signs	.....	11 57	.....	.....
17	Signal and interlocking systems	.....	.....	.....	.....
18	Telephone and telegraph systems	.....	15 25	20 60	25 00
19	Other miscellaneous way expenses	.....	.....	.....	.....
20	Poles and fixtures	7 75	15 25	246 33	25 00
21	Underground conduits	.....	.....	.....	.....
22	Transmission system	5 62	33 25	.....	25 00
23	Distribution system	148 00	72 25	102 40	29 00
24	Miscellaneous electric line expenses	.....	.....	12 84	.....
25	Buildings and structures	.....	117 55	10 44	89 98
26	Depreciation of way and structures	.....	.....	.....	.....
27	Other operations .....Dr.	.....	.....	.....	.....
28	Other operations .....Cr.	.....	.....	.....	.....
	Total	1,129 78	1,030 82	999 77	848 06
	Maintenance of Equipment.				
29	Superintendence of equipment	30 00	16 00	30 60	16 00
30	Power plant equipment	.....	.....	.....	.....
31	Substation equipment	48 13	21 00	13 84	2 00
32	Passenger and combination cars	231 11	373 20	190 65	466 38
33	Freight, express and mail cars	.....	.....	.....	.....
34	Locomotives	.....	.....	.....	.....
35	Service cars	.....	.....	.....	.....
36	Electric equipment of cars	146 37	150 18	147 57	129 01
37	Electric equipment of locomotives	.....	.....	.....	.....
38	Shop machinery and tools	.....	.....	3 87	.....
39	Shop expenses	43 86	1 36	113 79	1 74
40	Horses and vehicles	.....	.....	.....	.....
41	Other miscellaneous equipment expenses	.....	.....	.....	.....
42	Depreciation of equipment	.....	.....	.....	.....
43	Other operations .....Dr.	.....	.....	.....	.....
44	Other operations .....Cr.	.....	.....	.....	.....
	Total	499 47	561 74	499 72	615 13

RAILWAY.

Months, November 1st, 1913, to October 31st, 1915—Continued.

June, 1914	June, 1915	July, 1914	July, 1915	August, 1914	August, 1915	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
30 00	16 00	32 00	16 00	36 50	16 00	1
.....	14 00	.....	14 00	7 03	14 00	2
.....	39 67	.....	238 71	.....	115 51	3
.....	51 33	.....	51 33	.....	119 83	4
12 80	4 67	.....	4 67	.....	4 67	5
.....	4 67	.....	4 67	.....	34 69	6
.....	.....	.....	.....	.....	.....	7
479 87	588 76	450 51	477 94	673 71	493 87	8
.....	.....	.....	5 65	.....	5 01	9
.....	6 40	6 59	5 65	.....	6 92	10
32 30	26 72	35 91	34 71	40 28	25 46	11
.....	.....	.....	.....	.....	.....	12
.....	.....	.....	.....	.....	.....	13
.....	.....	.....	.....	.....	.....	14
120 84	.....	140 84	.....	129 37	.....	15
86 20	2 96	.....	.....	8 35	.....	16
.....	.....	.....	.....	.....	.....	17
11 50	25 00	5 90	25 00	79 10	31 08	18
.....	.....	.....	.....	.....	.....	19
74 17	34 00	221 18	35 29	60 65	25 00	20
.....	.....	.....	.....	.....	.....	21
25 70	25 00	.....	25 00	.....	25 00	22
153 07	35 80	477 67	34 00	152 09	47 05	23
.....	.....	.....	.....	.....	.....	24
25 75	57 32	6 44	59 11	.....	56 93	25
.....	.....	.....	.....	.....	.....	26
.....	.....	.....	.....	.....	.....	27
.....	.....	.....	.....	.....	.....	28
1,052 20	932 30	1,377 04	1,031 73	1,187 08	1,021 02	
30 00	16 00	32 00	20 50	32 00	16 00	29
.....	.....	.....	.....	.....	.....	30
.....	36 15	18 70	.....	.....	25 15	31
236 54	136 69	178 97	143 51	328 76	118 40	32
.....	.....	.....	.....	.....	.....	33
.....	.....	.....	.....	.....	.....	34
85 00	.....	.....	.....	.....	.....	35
36 78	108 38	205 96	136 29	42 62	115 18	36
.....	.....	.....	.....	.....	.....	37
11 65	.....	.....	.....	.....	.....	38
56 72	57	16 21	2 04	31 65	7 23	39
.....	.....	.....	.....	.....	.....	40
.....	.....	.....	.....	.....	.....	41
.....	.....	.....	.....	.....	.....	42
.....	.....	.....	.....	.....	.....	43
.....	.....	.....	.....	.....	.....	44
456 69	297 79	451 84	302 34	435 03	281 96	

NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures, by

No.	Maintenance of Way and Structures	September, 1914	September, 1915	October, 1914
		$ c.	$ c.	$ c.
1	Superintendence of way and structures	32 00	16 00	37 00
2	Ballast	.....	14 00	25 05
3	Ties	1 92	39 67	.....
4	Rails	.....	51 33	.....
5	Rail fastenings and joints	.....	4 67	.....
6	Special work	.....	4 67	4 07
7	Underground construction	.....	.....	.....
8	Roadway and track labor	699 98	483 81	903 85
9	Paving	.....	4 78	.....
10	Miscellaneous roadway and track expenses	.....	2 73	.....
11	Cleaning and sanding track	102 98	37 66	34 77
12	Removal of snow, ice and sand	.....	.....	.....
13	Tunnels	.....	.....	.....
14	Elevated structures and foundations	.....	.....	.....
15	Bridges, trestles and culverts	108 50	.....	12 50
16	Crossings, fences, cattle guards and signs	.....	.....	.....
17	Signal and interlocking systems	.....	.....	.....
18	Telephone and telegraph systems	22 50	25 00	49 72
19	Other miscellaneous way expenses	.....	.....	.....
20	Poles and fixtures	73 07	46 00	91 25
21	Underground conduits	.....	.....	.....
22	Transmission system	5 70	25 00	44 90
23	Distribution system	156 60	46 00	169 35
24	Miscellaneous electric line expenses	.....	.....	.....
25	Buildings and structures	40 11	79 51	217 80
26	Depreciation of way and structures	.....	.....	.....
27	ther operations ....Dr.	.....	.....	.....
28	Other operations ....Cr.	.....	.....	.....
	Total	1,243 36	880 83	1,590 26
	Maintenance of Equipment.			
29	Superintendence of equipment	32 00	16 00	32 00
30	Power plant equipment	.....	.....	13 08
31	Substation equipment	.....	75	1 32
32	Passenger and combination cars	260 72	144 46	203 44
33	reight, express and mail cars	274 85	.....	.....
34	Locomotives	.....	.....	.....
35	Service cars	.....	.....	.....
36	Electric equipment of cars	402 56	47 96	320 00
37	Electric equipment of locomotives	.....	.....	.....
38	Shop machinery and tools	.....	.....	1 05
39	Shop expenses	20 44	235 34	27 00
40	Horses and vehicles	.....	.....	.....
41	Other miscellaneous equipment expenses	.....	.....	.....
42	Depreciation of equipment	.....	.....	.....
43	Other operations ....Dr.	.....	.....	.....
44	Other operations ....Cr.	.....	.....	.....
	Total	990 57	444 51	597 89

RAILWAY.

Months, November, 1913, to October, 1915—Continued.

October, 1915	Total, 1914	Total, 1915	Increase	Decrease.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	
16 00	377 50	240 00	.....	137 50	1
14 00	146 82	183 22	36 40	.....	2
39 67	5 07	750 92	745 85	.....	3
48 93	156 61	682 06	525 45	.....	4
4 67	19 56	79 88	60 32	.....	5
4 67	377 94	221 09	.....	156 85	6
.....	.....	.....	.....	.....	7
477 18	5,983 52	5,214 29	.....	769 23	8
4 40	91 74	42 63	.....	49 11	9
5 40	90 99	62 75	31 76	.....	10
33 54	318 82	238 71	.....	80 11	11
.....	1,043 40	1,253 37	209 97	.....	12
.....	.....	.....	.....	.....	13
.....	.....	.....	.....	.....	14
.....	1,301 73	311 16	.....	990 57	15
.....	Cr. 124 46	47 36	171 82	.....	16
.....	.....	.....	.....	.....	17
25 00	201 73	296 82	95 09	.....	18
2 00	.....	2 00	2 00	.....	19
60 75	877 20	638 82	.....	238 38	20
.....	.....	.....	.....	.....	21
25 00	141 49	429 17	287 68	.....	22
113 25	1,670 24	1,024 31	.....	645 93	23
.....	12 84	.....	.....	12 84	24
56 46	341 48	1,091 24	749 76	.....	25
.....	.....	.....	.....	.....	26
.....	.....	.....	.....	.....	27
.....	.....	.....	.....	.....	28
930 92	12,974 22	12,809 80	.....	164 42	
16 00	372 50	275 10	.....	97 40	29
.....	140 37	.....	.....	140 37	30
953 68	268 86	1,331 58	1,062 72	.....	31
108 76	2,770 88	3,437 81	666 93	.....	32
.....	276 60	.....	.....	276 60	33
.....	.....	.....	.....	.....	34
.....	94 10	.....	.....	94 10	35
15 43	1,703 98	1,461 73	.....	242 25	36
.....	.....	.....	.....	.....	37
.....	20 87	.....	.....	20 87	38
5 02	521 75	334 50	.....	187 25	39
.....	.....	.....	.....	.....	40
.....	.....	.....	.....	.....	41
.....	.....	.....	.....	.....	42
.....	.....	.....	.....	.....	43
.....	.....	.....	.....	.....	44
1,098 89	6,169 91	6,840 72	670 81	.....	

NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures by

No.	Traffic Expenses.	November, 1913	November, 1914	December, 1913	December, 1914
		$ c.	$ c.	$ c.	$ c.
45	Superintendence and solicitation	30 00	32 00	30 00	32 00
46	Advertising	22 40	16 80	22 40	33 60
47	Miscellaneous traffic supplies				
	Total	52 40	48 80	52 40	65 60
	Transportation Expenses.				
48	Superintendence of transportation	30 00	32 00	30 00	41 38
	Group I—Power.				
49	Power plant employees				
50	Substation employees	150 00	157 50	155 00	160 00
51	Fuel for power				
52	Water for power				
53	Lubricants for power				
54	Miscellaneous power-plant supplies and expenses				
55	Substation supplies and expenses				
56	Power purchased	1,191 60	1,377 00	1,315 58	1,613 25
57	Power exchanged—balance				
58	Other operations ..... Dr.				
59	Other operations ..... Cr.				
	Group II—Operation of Cars.				
60	Passenger conductors, motormen and trainmen	1,159 45	1,586 30	1,233 86	1,593 37
61	Freight and express conductors, motormen and trainmen	54 84	273 00		279 40
62	Miscellaneous car service employees	10 26	6 08	8 36	10 26
63	Miscellaneous car service expenses	321 86	85 71	46 71	368 33
64	Station employees		25 50		95 50
65	Station expenses		63 46		21 93
66	Carhouse employees	144 00	210 00	165 50	217 50
67	Carhouse expenses			3 80	
68	Operation of signal and interlocking systems				
69	Operation of telephone and telegraph systems		54		
70	Express and freight collections and delivery				
71	Loss and damage				
72	Other transportation expenses			38	
	Total	3,062 01	3,817 09	2,959 19	4,400 92
	General and Miscellaneous Expenses.				
73	Salaries and expenses, general officers	30 00	32 00	30 00	32 00
74	Salaries and expenses, general office clerks	150 00	155 00	150 00	155 00
75	General office supplies and expenses	8 00	84 49	8 54	41 27
76	Law expenses				
79	Miscellaneous general expenses	8 75	7 35	75	90
80	Other operations ..... Dr.				
81	Other operations ..... Cr.				
	Undistributed Accounts.				
82	Injuries and damages				
83	Insurance	106 33	132 96	106 33	119 63
84	Stationery and printing	21 00		38 59	37 50
85	Store expenses				
86	Stable expenses				
87	Rent of tracks and terminals	1,327 11	862 92	1,320 00	Cr. 812 92
88	Rent of equipment		75 90		273 90
	Total	1,651 19	1,350 62	1,654 21	Cr. 152 72

RAILWAY.

Months, November, 1913, to October, 1915—Continued.

January, 1914	January, 1915	February, 1914	February, 1915	March, 1914	March, 1915	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
30 00	32 00	30 00	.....	30 00	.....	45
11 20	11 20	30 40	11 20	28 00	.....	46
.....	.....	.....	.....	.....	.....	47
41 20	43 20	60 40	11 20	58 00	.....	
30 00	32 00	30 00	112 00	30 00	112 00	48
.....	.....	.....	.....	.....	.....	49
155 00	160 00	140 00	165 50	155 00	160 00	50
.....	.....	.....	.....	.....	.....	51
.....	.....	.....	.....	.....	.....	52
.....	.....	.....	.....	.....	.....	53
.....	.....	.....	.....	.....	.....	54
.....	.....	.....	.....	.....	.....	55
1,484 78	1,633 50	1,406 25	1,449 00	1,341 23	1,455 75	56
.....	.....	.....	.....	.....	.....	57
.....	.....	.....	.....	.....	.....	58
.....	.....	.....	.....	.....	.....	59
1,327 42	1,646 16	1,243 50	1,507 72	1,405 10	1,660 10	60
9 45	276 40	48 68	251 20	23 23	279 40	61
11 78	6 84	10 26	6 08	11 40	6 84	62
18 87	31 27	31 01	79 58	57 51	40 53	63
90 00	58 00	.....	37 50	45 00	3 00	64
11 53	1 15	.....	17 29	65 27	17 78	65
167 50	208 91	163 25	210 00	172 75	185 00	66
3 80	17 70	.....	233 35	5 47	4 11	67
.....	.....	.....	.....	.....	.....	68
.....	.....	.....	.....	.....	.....	69
.....	.....	.....	.....	.....	.....	70
.....	.....	.....	4 42	.....	.....	71
.....	.....	.....	.....	.....	.....	72
3,310 13	4,071 93	3,072 95	4,073 64	3,312 96	3,924 51	
50 00	32 00	30 00	25 30	30 00	16 00	73
155 00	155 00	155 00	155 00	155 00	155 00	74
61 00	3 75	8 34	4 45	252 05	5 84	75
.....	.....	.....	.....	.....	.....	76
5 10	5 50	17 65	2 25	1 35	12 50	79
.....	.....	.....	.....	.....	.....	80
.....	.....	.....	.....	.....	.....	81
.....	.....	.....	.....	.....	.....	82
115 33	112 91	106 33	112 91	216 41	114 12	83
33 65	58 60	21 50	6 21	19 12	84 69	84
.....	.....	.....	.....	.....	.....	85
.....	.....	.....	.....	.....	.....	86
1,320 00	25 00	1,320 00	25 00	1,320 00	50 00	87
.....	75 00	.....	302 70	.....	293 25	88
1,720 08	467 76	1,658 82	631 82	1,993 93	731 40	

NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures by

No.	Traffic Expenses.	April, 1914	April, 1915	May, 1914	May, 1915
		$ c.	$ c.	$ c.	$ c.
45	Superintendence and solicitation	30 00	.....	30 00	.....
46	Advertising	44 80	57 40	22 40	75 79
47	Miscellaneous traffic supplies	.....	.....	.....	.....
	Total	74 80	57 40	52 40	75 79
	Transportation Expenses.				
48	Superintendence of transportation ...	30 00	241 95	30 00	112 00
	Group I—Power.				
49	Power plant employees	.....	.....	.....	.....
50	Substation employees	152 25	160 00	162 13	160 00
51	Fuel for power	.....	.....	.....	.....
52	Water for power	.....	.....	.....	.....
53	Lubricants for power	.....	.....	.....	.....
54	Miscellaneous power-plant supplies and expenses	.....	.....	.....	.....
55	Substation supplies and expenses	.....	.....	.....	.....
56	Power purchased	1,280 02	1,201 50	1,056 60	1,203 75
57	Power exchanged—balance	.....	.....	.....	.....
58	Other operations .....Dr.	.....	.....	.....	.....
59	Other operations .....Cr.	.....	.....	.....	.....
	Group II—Operation of Cars.				
60	Passenger conductors, motormen and trainmen	1,345 88	1,560 54	1,466 45	1,540 58
61	Freight and express conductors, motormen and trainmen	25 85	270 00	11 65	273 50
62	Miscellaneous car service employees..	69 53	6 46	25 78	6 84
63	Miscellaneous car service expenses...	28 45	331 61	94 14	27 46
64	Station employees	90 00	.....	90 00	.....
65	Station expenses	.....	2 16	37 44	1 77
66	Carhouse employees	197 50	210 00	190 47	210 00
67	Carhouse expenses	.....	.....	.....	.....
68	Operation of signal and interlocking systems	.....	.....	.....	.....
69	Operation of telephone and telegraph systems	.....	.....	.....	.....
70	Express and freight collections and delivery	.....	.....	.....	.....
71	Loss and damage	.....	.....	.....	.....
72	Other transportation expenses	.....	.....	47 25	.....
	Total	3,219 48	3,984 22	3,211 91	3,535 90
	General and Miscellaneous Expenses				
73	Salaries and expenses, general officers	30 00	16 00	30 00	16 00
74	Salaries and expenses, general office clerks	155 00	155 00	155 00	155 00
75	General office supplies and expenses..	14 09	7 33	3 30	4 50
76	Law expenses	.....	.....	.....	.....
79	Miscellaneous general expenses	1 15	1 75	3 25	40
80	Other operations .....Dr.	.....	.....	.....	.....
81	Other operations .....Cr.	.....	.....	.....	.....
	Undistributed Accounts.				
82	Injuries and damages	.....	.....	.....	.....
83	Insurance	107 58	113 77	257 58	113 77
84	Stationery and printing	33 72	5 00	8 50	6 00
85	Store expenses	.....	.....	.....	.....
86	Stable expenses	.....	.....	.....	.....
87	Rent of tracks and terminals	1,320 00	249 68	1,320 00	50 00
88	Rent of equipment	.....	282 45	450 00	832 80
	Total	1,661 54	830 98	2,227 63	1,178 47

RAILWAY—Continued

Months, November, 1913, to October, 1915—Continued.

June, 1914	June, 1915	July, 1914	July, 1915	August, 1914	August, 1915	No.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
30 00	.....	32 00	.....	32 00	.....	45
44 80	33 60	11 20	28 00	77 44	49 20	46
.....	.....	.....	.....	.....	.....	47
74 80	33 60	43 20	28 00	109 44	49 20	
30 00	112 00	32 00	112 00	32 00	112 00	48
.....	.....	.....	.....	.....	.....	49
160 00	160 00	199 25	160 00	201 29	160 00	50
.....	.....	.....	.....	.....	.....	51
.....	.....	.....	.....	.....	.....	52
.....	.....	.....	.....	.....	.....	53
.....	.....	.....	.....	.....	.....	54
.....	.....	.....	.....	.....	.....	55
1,004 85	1,183 50	1,180 58	1,246 50	1,221 98	1,273 50	56
.....	.....	.....	.....	.....	.....	57
.....	.....	.....	.....	.....	.....	58
.....	.....	.....	.....	.....	.....	59
1,514 68	1,525 01	1,283 29	1,596 65	1,585 81	1,426 82	60
4 75	272 40	493 44	279 40	218 00	278 00	61
11 40	6 99	20 90	6 99	11 78	6 46	62
302 77	18 93	200 23	147 05	95 05	9 00	63
.....	.....	.....	.....	60 00	.....	64
.....	.....	30	8 44	4 33	66 45	65
241 50	210 00	168 75	210 00	171 50	210 00	66
.....	.....	.....	.....	.....	.....	67
.....	.....	.....	.....	.....	.....	68
.....	.....	.....	.....	.....	.....	69
.....	.....	.....	.....	.....	.....	70
.....	Cr. 1 65	.....	.....	.....	.....	71
3 97	.....	.....	.....	.....	.....	72
3,273 92	3,487 18	3,578 74	3,767 03	3,601 74	3,542 23	
30 00	16 00	34 50	24 39	32 00	16 00	73
155 00	155 00	155 00	155 00	155 00	155 00	74
3 00	4 25	3 35	5 00	3 00	5 00	75
.....	.....	.....	.....	.....	.....	76
26 25	.....	2 05	30	.....	29 90	79
.....	.....	.....	.....	.....	.....	80
.....	.....	.....	.....	.....	.....	81
8 00	100 00	72 75	.....	.....	.....	82
107 58	94 09	137 33	65 95	220 95	48 20	83
24 30	10 20	43 47	.....	8 00	193 37	84
.....	.....	.....	.....	.....	.....	85
.....	.....	.....	.....	.....	.....	86
1,320 00	50 00	1,320 00	135 01	1,320 00	50 00	87
.....	300 45	409 05	295 95	.....	339 15	88
1,674 13	729 99	2,177 50	681 60	1,738 95	836 62	

NIPISSING CENTRAL

Comparative Statement of Earnings and Expenditures by

No.	Traffic Expenses.	September. 1914	September. 1915	October. 1914
		$ c.	$ c.	$ c.
45	Superintendence and solicitation	32 00	.....	32 00
46	Advertising	16 80	28 00	22 40
47	Miscellaneous traffic supplies	.....	.....	.....
	Total	48 80	28 00	54 40
	Transportation Expenses.			
48	Superintendence of Transportation	32 00	112 00	32 00
	Group I—Power.			
49	Power plant employees	.....	.....	.....
50	Substation employees	160 00	160 00	175 00
51	Fuel for power	.....	.....	.....
52	Water for power	.....	.....	.....
53	Lubricants for power	.....	.....	.....
54	Miscellaneous power plant supplies and expenses	.....	.....	.....
55	Substation supplies and expenses	.....	.....	.....
56	Power purchased	1,276 20	1,273 50	1,341 45
57	Power exchanged—balance	.....	.....	.....
58	Other operations ..... Dr.	.....	.....	.....
59	Other operations ..... Cr.	.....	.....	.....
	Group II—Operation of Cars.			
60	Passenger conductors, motormen and trainmen	1,597 46	1,430 76	1,616 16
61	Freight and express conductors, motormen and trainmen	289 60	261 60	279 85
62	Miscellaneous car service employees	10 64	6 46	5 32
63	Miscellaneous car service expenses	59 51	23 85	491 41
64	Station employees	248 00	.....	148 00
65	Station expenses	21 19	2 56	122 68
66	Carhouse employees	222 00	210 00	217 50
67	Carhouse expenses	15 94	18 21	211 08
68	Operation of signal and interlocking systems	.....	.....	.....
69	Operation of telephone and telegraph systems	.....	.....	37
70	Express and freight collections and delivery	.....	.....	.....
71	Loss and damage	.....	.....	.....
72	Other transportation expenses	38	.....	.....
	Total	3,932 92	3,498 94	4,640 82
	General and Miscellaneous Expenses.			
73	Salaries and expenses, general officers	32 00	16 00	32 00
74	Salaries and expenses, general office clerks	155 00	155 00	155 00
75	General office supplies and expenses	3 30	5 00	7 75
76	Law expenses	.....	10 00	.....
79	Miscellaneous general expenses	16 15	2 00	55
80	Other operations ..... Dr.	.....	.....	.....
81	Other operations ..... Cr.	.....	.....	.....
	Undistributed Accounts.			
82	Injuries and damages	38 50	.....	.....
83	Insurance	167 89	48 20	136 86
84	Stationery and printing	6 12	8 41	44 22
85	Store expenses	.....	.....	.....
86	Stable expenses	.....	.....	.....
87	Rent of tracks and terminals	1,595 84	177 14	1,457 92
88	Rent of equipment	.....	354 45	.....
	Total	2,014 80	776 20	1,834 30

RAILWAY—Continued

Months, November, 1913, to October, 1915.

October. 1915	Total, 1914	Total. 1915	Increase.	Decrease.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	
.....	368 00	96 00	.....	272 00	45
33 60	354 24	378 39	24 15	.....	46
.....	.....	.....	.....	.....	47
33 60	722 24	474 39	.....	247 85	
112 00	368 00	1,243 33	875 33	.....	48
.....	.....	.....	.....	.....	49
160 00	1,964 92	1,923 00	.....	41 92	50
.....	.....	.....	.....	.....	51
.....	.....	.....	.....	.....	52
.....	.....	.....	.....	.....	53
.....	.....	.....	.....	.....	54
.....	.....	.....	.....	.....	55
1,329 75	15,101 12	16,240 50	1,139 38	.....	56
.....	.....	.....	.....	.....	57
.....	.....	.....	.....	.....	58
.....	.....	.....	.....	.....	59
1,469 13	16,779 06	18,543 14	1,764 08	.....	60
270 40	1,459 34	3,264 70	1,805 36	.....	61
6 84	207 41	83 14	.....	124 27	62
14 10	1,747 52	1,177 42	.....	570 10	63
.....	771 00	219 50	.....	551 50	64
13 63	263 74	216 62	.....	47 12	65
210 00	2,222 22	2,501 41	279 19	.....	66
.....	240 09	273 37	33 28	.....	67
.....	.....	.....	.....	.....	68
.....	37	54	17	.....	69
.....	.....	.....	.....	.....	70
.....	.....	2 77	2 77	.....	71
.....	51 98	.....	.....	51 98	72
3,585 85	41,176 77	45,689 44	4,512 67	.....	
16 00	370 50	255 69	.....	114 81	73
155 00	1,850 00	1,860 00	10 00	.....	74
4 75	375 72	175 63	.....	200 09	75
.....	.....	10 00	10 00	.....	76
90	83 00	63 75	.....	19 25	79
.....	.....	.....	.....	.....	80
.....	.....	.....	.....	.....	81
.....	119 25	100 00	.....	19 25	82
43 37	1,786 50	1,119 88	.....	666 62	83
27 51	302 19	437 49	135 30	.....	84
.....	.....	.....	.....	.....	85
.....	.....	.....	.....	.....	86
96 69	16,260 87	958 52	.....	15,302 35	87
330 15	859 05	3,756 15	2,897 10	.....	88
674 37	22,007 08	8,737 11	.....	13,269 97	

NIPISSING CENTRAL

Statement of Earnings and Expenditures by Months, November, 1914, to

No.	RECEIPTS.	Per Cent.	1914 November	Per Cent.	1914 December
	I. Revenue from Transportation.		$ c.		$ c.
101	Passenger revenue	.....	7,516 90	.....	7,775 75
102	Baggage revenue	.....	35 05	.....	31 25
103	Parlor, sleeping, dining and special car revenue	.....	21 00	.....	39 00
104	Mail revenue	.....	.....	.....	.....
105	Express revenue	.....	.....	.....	.....
106	Milk revenue	.....	27 30	.....	27 10
107	Freight revenue	.....	420 38	.....	398 48
108	Switching revenue	.....	580 29	.....	555 30
109	Miscellaneous transportation revenue	.....	.....	.....	.....
	Total	.....	8,600 92	.....	8,826 88
	II. Revenue from other Railway Operations.				
110	Station and car privileges	.....	.....	.....	.....
111	Parcel room receipts	.....	.....	.....	.....
112	Storage	.....	.....	.....	.....
113	Demurrage	.....	49 00	.....	84 00
114	Telephone and telegraph service	.....	.....	.....	.....
115	Rent of tracks and facilities	.....	.....	.....	.....
116	Rent of equipment	.....	.....	.....	.....
117	Rent of buildings and other property	.....	.....	.....	.....
118	Power	.....	.....	.....	.....
119	Miscellaneous	.....	.....	.....	.....
	Total	.....	49 00	.....	84 00
	Total revenue	.....	8,649 92	.....	8,910 88
	EXPENDITURES.				
1	Way and structures	15.2	1,314 31	15.3	1,362 67
2	Equipment	4.8	414 04	6.6	587 12
3	Power	18.5	1,599 50	20.8	1,855 48
4	Conducting transportation	26.4	2,282 59	29.4	2,618 29
5	Traffic	.6	48 80	.7	65 60
6	General and Miscellaneous	15.2	1,318 62	Cr. 2.1	Cr. 184 72
7	Transportation for investment—Cr.	.....	.....	.....	.....
	Total operating expenses	80.7	6,977 86	70.7	6,304 44
	Balance	.....	1,672 06	.....	2,606 44
	Other income:				
	Interest	.....	.....	.....	.....
		.....	1,672 06	.....	2,606 44
	Deductions from income:				
	Rent for lease of roads	.....	.....	.....	1,209 18
	Taxes	.....	27 19	.....	.....
	Net result	.....	1,644 87	.....	1,397 26

RAILWAY—Continued

October, 1915—Under New Classification—Effective November, 1914.

Per Cent.	1915 January	Per Cent.	1915 February	Per Cent.	1915 March	Per Cent.	1915 April	No.
	$ c.		$ c.		$ c.		$ c.	
.....	7,121 33	.....	6,537 20	.....	7,484 25	.....	7,739 65	101
.....	24 25	.....	23 00	.....	25 75	.....	36 75	102
.....	25 00	.....	65 00	.....	26 00	.....	60 00	103
.....	.....	.....	.....	.....	.....	.....	.....	104
.....	.....	.....	.....	.....	.....	.....	.....	105
.....	14 06	.....	08	.....	53	.....	23 63	106
.....	731 12	.....	617 08	.....	655 32	.....	364 04	107
.....	394 01	.....	195 59	.....	401 37	.....	523 12	108
.....	.....	.....	.....	.....	.....	.....	.....	109
.....	8,309 77	.....	7,437 95	.....	8,587 22	.....	8,746 59	
.....	65 83	.....	65 84	.....	46 10	.....	59 25	110
.....	.....	.....	.....	.....	.....	.....	.....	111
.....	.....	.....	.....	.....	.....	.....	.....	112
.....	42 00	.....	57 00	.....	142 00	.....	76 00	113
.....	.....	.....	.....	.....	.....	.....	.....	114
.....	186 00	.....	.....	.....	.....	.....	Dr. 46 00	115
.....	.....	.....	.....	.....	.....	.....	.....	116
.....	.....	.....	.....	.....	.....	.....	.....	117
.....	.....	.....	.....	.....	.....	.....	.....	118
.....	.....	.....	.....	.....	.....	.....	.....	119
.....	293 83	.....	122 84	.....	188 10	.....	89 25	
.....	8,603 60	.....	7,560 79	.....	8,775 32	.....	8,835 84	
8.5	732 16	16.2	1,227 25	14.3	1,251 81	11.3	996 06	1
8.1	699 19	8.6	649 86	6.8	595 30	6.1	540 74	2
23.	1,975 60	25.2	1,901 15	19.2	1,683 22	16.2	1,433 26	3
26.5	2,278 43	32.5	2,459 14	26.3	2,308 76	29.7	2,622 72	4
.5	43 20	.2	11 20	.....	.....	.7	57 40	5
5.1	435 76	8.	608 52	8.1	715 40	9.2	814 98	6
.....	.....	.....	.....	.....	.....	.....	.....	7
71.7	6,164 34	90.7	6,857 12	74.7	6,554 49	73.2	6,465 16	
.....	2,439 26	.....	703 67	.....	2,220 83	.....	2,370 68	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	2,439 26	.....	703 67	.....	2,220 83	.....	2,370 68	
.....	604 58	.....	604 58	.....	604 58	.....	604 58	
.....	.....	.....	.....	.....	.....	.....	.....	
.....	1,834 68	.....	99 09	.....	1,616 25	.....	1,766 10	

NIPISSING CENTRAL

Statement of Earnings and Expenditures by Months, November, 1914, to

No.	RECEIPTS	Per Cent.	1915 May	Per Cent.	1915 June	Per Cent.
	I. Revenue from Transportation.		$ c.		$ c.	
101	Passenger revenue	.....	8,006 00	.....	8,029 27	.....
102	Baggage revenue	.....	57 25	.....	53 25	.....
103	Parlor, sleeping, dining and special car revenue	.....	30 00	.....	60 00	.....
104	Mail revenue	.....	.....	.....	.....	.....
105	Express revenue	.....	.....	.....	.....	.....
106	Milk revenue	.....	34 43	.....	9 15	.....
107	Freight revenue	.....	302 88	.....	259 27	.....
108	Switching revenue	.....	552 53	.....	680 30	.....
109	Miscellaneous transportation revenue	.....	.....	.....	.....	.....
	Total	.....	8,983 09	.....	9,091 24	.....
	II. Revenue from other Railway Operations.					
110	Station and car privileges	.....	6 38	.....	29 07	.....
111	Parcel room receipts	.....	.....	.....	.....	.....
112	Storage	.....	.....	.....	.....	.....
113	Demurrage	.....	45 00	.....	58 00	.....
114	Telephone and telegraph service	.....	.....	.....	.....	.....
115	Rent of tracks and facilities	.....	.....	.....	.....	.....
116	Rent of equipment	.....	.....	.....	.....	.....
117	Rent of buildings and other property	.....	.....	.....	.....	.....
118	Power	.....	.....	.....	.....	.....
119	Miscellaneous	.....	.....	.....	.....	.....
	Total	.....	51 38	.....	87 07	.....
	Total revenue	.....	9,034 47	.....	9,178 31	.....
	EXPENDITURES					
1	Way and structures	9.1	821 15	9.9	907 30	9.8
2	Equipment	6.8	613 13	2.8	261 64	2.9
3	Power	15.6	1,408 66	15.5	1,420 65	14.1
4	Conducting transportation	24.	2,172 15	23.4	2,143 68	22.9
5	Traffic	.8	75 79	.4	33 60	.3
6	General and Miscellaneous	12.9	1,162 47	7.7	713 99	6.4
7	Transportation for investment—Cr.	.....	.....	.....	.....	.....
	Total operating expenses	69.2	6,253 35	59.7	5,480 86	56.4
	Balance	.....	2,781 12	.....	3,697 45	.....
	Other income:					
	Interest	.....	.....	.....	.....	.....
		.....	2,781 12	.....	3,697 45	.....
	Deductions from income:					
	Rent for lease of road	.....	604 58	.....	604 58	.....
	Taxes	.....	.....	.....	.....	.....
	Net result	.....	2,176 54	.....	3,092 87	.....

RAILWAY

October, 1915—Under New Classification—Effective November, 1914.

1915 July	Per Cent.	1915 August	Per Cent.	1915 Sept.	Per Cent.	1915 Oct.	Per Cent.	Total	No.
$ c.		$ c.		$ c.		$ c.		$ c.	
8,965 10	.....	7,992 92	.....	7,160 85	.....	7,293 30	.....	91,622 52	101
77 50	.....	49 50	.....	40 50	.....	28 00	.....	482 05	102
									103
40 00	.....	35 00	.....	30 00	.....	45 00	.....	470 00	
.....	.....	.....	.....	.....	.....	.....	.....	.....	104
.....	.....	.....	.....	.....	.....	.....	.....	.....	105
16	.....	38	.....	3 00	.....	9 00	.....	148 22	106
188 02	.....	323 16	.....	353 47	.....	261 01	.....	4,874 23	107
1,009 61	.....	1,041 29	.....	961 63	.....	966 45	.....	7,861 47	108
.....	.....	.....	.....	.....	.....	.....	.....	.....	109
10,280 39	.....	9,442 25	.....	8,549 45	.....	8,602 74	.....	105,458 49	
14 28	.....	42 38	.....	18 00	.....	152 00	.....	499 13	110
.....	.....	.....	.....	.....	.....	.....	.....	.....	111
.....	.....	.....	.....	.....	.....	.....	.....	.....	112
1 00	.....	2 00	.....	42 00	.....	15 00	.....	613 00	113
.....	.....	.....	.....	.....	.....	.....	.....	.....	114
.....	.....	.....	.....	.....	.....	.....	.....	140 00	115
.....	.....	.....	.....	.....	.....	.....	.....	.....	116
.....	.....	.....	.....	.....	.....	.....	.....	.....	117
.....	.....	.....	.....	.....	.....	.....	.....	.....	118
.....	.....	.....	.....	.....	.....	.....	.....	.....	119
15 28	.....	44 38	.....	60 00	.....	167 00	.....	1,252 13	
10,295 67	.....	9,486 63	.....	8,609 45	.....	8,769 74	.....	106,710 62	
1,006 73	10.5	996 02	9.9	855 83	10.3	905 92	11.6	12,377 21	1
302 34	2.7	256 81	5.2	443 76	1.7	145 21	5.2	5,509 14	2
1,447 50	15.8	1,499 65	17.2	1,475 25	28.3	2,484 43	18.9	20,184 35	3
2,360 53	22.2	2,108 73	24.	2,065 44	23.9	2,096 10	25.8	27,516 56	4
28 00	.5	49 20	.3	28 00	.4	33 60	.4	474 39	5
665 60	8.7	820 62	8.8	760 20	7.5	658 37	8.	8,489 81	6
.....	.....	.....	.....	.....	.....	.....	.....	.....	7
5,810 70	60.4	5,731 03	65.4	5,628 48	72.1	6,323 63	69.9	74,551 46	
4,484 97	.....	3,755 60	.....	2,980 97	.....	2,446 11	.....	32,159 16	
.....	.....	16 45	.....	92 90	.....	108 65	.....	218 00	
4,484 97	.....	3,772 05	.....	3,073 87	.....	2,554 76	.....	32,377 16	
604 58	.....	604 58	.....	604 58	.....	604 58	.....	7,254 98	
.....	.....	.....	.....	.....	.....	.....	.....	27 19	
3,880 39	.....	3,167 47	.....	2,469 29	.....	1,950 18	.....	25,094 99	

Statement of Earnings and Expenditures by Months, November, 1914,

No.	Maintenance of Way and Structures.	November, 1914	December, 1914
		$ c.	$ c.
1	Superintendence of way and structures	32 00	32 00
2	Ballast	15 22	28 00
3	Ties		79 34
4	Rails		102 66
5	Rail fastenings and joints		9 34
6	Special work	22 39	9 34
7	Underground construction		
8	Track and roadway labor	450 88	506 15
9	Miscellaneous track and roadway expenses	2 87	11 55
10	Paving	22 79	
11	Cleaning and sanding track	17 10	14 25
12	Removal of snow and ice	51 81	279 15
13	Tunnels and subways		
14	Elevated structures and foundations		
15	Bridges, trestles and culverts		
16	Crossings, fences and signs	24 86	7 97
17	Signal and interlocking apparatus		
18	Telephone and telegraph lines	28 00	24 49
19	Miscellaneous way expenses		
20	Poles and fixtures	130 50	65 00
21	Underground conduits		
22	Distribution system	160 40	111 39
23	Miscellaneous electric line expenses		
24	Buildings, fixtures and grounds	355 49	82 04
25	Depreciation of way and structures		
26	Other operations ....Dr.		
27	Other operations ....Cr.		
28	Equalization—way and structures		
	Total	1,314 31	1,362 67
	Maintenance of Equipment.		
29	Superintendence of equipment	32 00	36 50
30	Passenger and combination cars	179 40	304 32
31	Freight, express and mail cars		
32	Service equipment		
33	Electric equipment of cars	199 77	226 33
34	Locomotives		
35	Floating equipment		
36	Shop equipment		
37	Shop expenses	2 87	19 97
38	Vehicles and horses		
39	Miscellaneous equipment expenses		
40	Depreciation of equipment		
41	Equipment retired		
42	Other operations ....Dr.		
43	Other operations ....Cr.		
44	Equalization—equipment		
	Total	414 04	587 12

to October, 1915, under New Classification effective November, 1914.

January, 1915.	February, 1915.	March, 1915.	April, 1915.	May, 1915.	No.
$ c.	$ c.	$ c.	$ c.	$ c.	
32 00	16 00	16 00	16 00	16 00	1
14 00	14 00	14 00	14 00	14 00	2
39 67	39 67	39 67	39 67	39 67	3
51 33	51 33	51 33	51 33	51 33	4
4 67	4 67	21 49	4 67	11 69	5
4 67	4 67	117 31	4 67	4 67	6
					7
238 72	270 01	330 94	407 01	489 02	8
6 18	4 57	3 58	3 77	3 13	9
					10
		6 65	18 05	24 57	11
354 59.	323 02	211 99	32 81		12
					13
					14
	137 44		173 72		15
			11 57		16
					17
34 00	21 00	18 00	15 25	25 00	18
					19
67 87	59 16	75 00	15 25	25 00	20
					21
124 00	77 00	174 17	72 25	29 00	22
					23
Cr. 239 54	204 71	171 68	116 04	88 07	24
					25
					26
					27
					28
732 16	1,227 25	1,251 81	996 06	821 15	
58 10	16 00	16 00	16 00	16 00	29
488 69	481 42	492 58	373 20	466 38	30
					31
					32
127 31	131 18	74 71	150 18	129 01	33
					34
					35
					36
25 09	21 26	12 01	1 36	1 74	37
					38
					39
					40
					41
					42
					43
					44
699 19	649 86	595 30	540 74	613 13	

Statement of Earnings and Expenditures by Months, November, 1914 to

No.	Maintenance of Way and Structures	June, 1915.	July, 1915.
		$ c.	$ c.
1	Superintendence of way and structures	16 00	16 00
2	Ballast	14 00	14 00
3	Ties	39 67	238 71
4	Rails	51 33	51 33
5	Rail fastenings and joints	4 67	4 67
6	Special work	4 67	4 67
7	Underground construction		
8	Track and roadway labor	588 76	477 94
9	Miscellaneous track and roadway expenses	6 40	5 65
10	Paving		5 65
11	Cleaning and sanding track	26 72	34 71
12	Removal of snow and ice		
13	Tunnels and subways		
14	Elevated structures and foundations		
15	Bridges, trestles and culverts		
16	Crossings, fences and signs	2 96	
17	Signal and interlocking apparatus		
18	Telephone and telegraph lines	25 00	25 00
19	Miscellaneous way expenses		
20	Poles and fixtures	34 00	35 29
21	Underground conduits		
22	Distribution system	35 80	34 00
23	Miscellaneous electric line expenses		
24	Buildings, fixtures and grounds	57 32	59 11
25	Depreciation of way and structures		
26	Other operations ....Dr.		
27	Other operations ....Cr.		
28	Equalization—way and structures		
	Total	907 30	1,006 73
	Maintenance of Equipment.		
29	Superintendence of equipment	16 00	20 50
30	Passenger and combination cars	136 69	143 51
31	Freight, express and mail cars		
32	Service equipment		
33	Electric equipment of cars	108 38	136 29
34	Locomotives		
35	Floating equipment		
36	Shop equipment		
37	Shop expenses	57	2 04
38	Vehicles and horses		
39	Miscellaneous equipment expenses		
40	Depreciation of equipment		
41	Equipment retired		
42	Other operations ....Dr.		
43	Other operations ....Cr.		
44	Equalization—equipment		
	Total	261 64	302 34

October, 1915, under New Classification effective November, 1914. Contd.

August, 1915.	September, 1915.	October, 1915.	Total.	No.
$ c.	$ c.	$ c.	$ c.	
16 00	16 00	16 00	240 00	1
14 00	14 00	14 00	183 22	2
115 51	39 67	39 67	750 92	3
119 83	51 33	48 93	682 06	4
4 67	4 67	4 67	79 88	5
34 69	4 67	4 67	221 09	6
				7
493 87	483 81	477 18	5,214 29	8
6 92	2 73	5 40	62 75	9
5 01	4 78	4 40	42 63	10
25 46	37 66	33 54	238 71	11
			1,253 37	12
				13
				14
			311 16	15
			47 36	16
				17
31 08	25 00	25 00	296 82	18
		2 00	2 00	19
25 00	46 00	60 75	638 82	20
				21
47 05	46 00	113 25	1,024 31	22
				23
56 93	79 51	56 46	1,087 82	24
				25
				26
				27
				28
996 02	855 83	905 92	12,377 21	
16 00	16 00	16 00	275 10	29
118 40	144 46	108 76	3,437 81	30
				31
				32
115 18	47 96	15 43	1,461 73	33
				34
				35
				36
7 23	235 34	5 02	334 50	37
				38
				39
				40
				41
				42
				43
				44
256 81	443 76	145 21	5,509 14	

Statement of Earnings and Expenditures by Months, November, 1914, to

No.	Power	November, 1914	December, 1914
		$ c.	$ c.
45	Superintendence of power	32 00	41 38
46	Power plant buildings, fixtures and grounds		
47	Power plant equipment		
48	Substation equipment		
49	Transmission system	33 00	40 85
50	Depreciation of power plant buildings and equipment		
51	Equalization—power		
52	Power plant employees		
53	Fuel for power		
54	Water for power		
55	Lubricants for power		
56	Miscellaneous power plant supplies and expenses		
57	Substation employees	157 50	160 00
58	Substation supplies and expenses		
59	Power purchased	1,377 00	1,613 25
60	Power exchanged—balance		
61	Power transferred—credit		
62	Other operations ..... Cr.		
	Total	1,599 50	1,855 48
	Conducting Transportation.		
63	Superintendence of transportation	32 00	32 00
64	Passenger conductors, motormen and trainmen	1,586 30	1,593 37
65	Freight and express conductors, motormen and trainmen	273 00	279 40
66	Miscellaneous car service employees	6 08	10 26
67	Miscellaneous car service expenses	85 71	368 33
68	Station employees	25 50	95 50
69	Station expenses	63 46	21 93
70	Carhouse employees	210 00	217 50
71	Carhouse expenses		
72	Operation of signal and interlocking apparatus		
73	Operation of telephone and telegraph lines	54	
74	Operation of floating equipment		
75	Operation of steam locomotives		
76	Freight and express collection and delivery		
77	Loss and damage		
78	Other transportation expenses		
	Total	2,282 59	2,618 29
	Traffic.		
79	Superintendence and solicitation	32 00	32 00
80	Advertising	16 80	33 60
81	Parks, resorts, and attractions		
82	Miscellaneous traffic expenses		
	Total	48 80	65 60

October, 1915, under New Classification effective November, 1914—Continued.

January, 1915	February, 1915	March, 1915	April, 1915	May, 1915	No.
$ c.	$ c.	$ c.	$ c.	$ c.	
32 00	23 30	16 00	16 00	16 00	45
.....	.....	.....	1 51	1 91	46
.....	.....	.....	.....	.....	47
119 10	173 75	.....	21 00	2 00	48
31 00	89 60	51 47	33 25	25 00	49
.....	.....	.....	.....	.....	50
.....	.....	.....	.....	.....	51
.....	.....	.....	.....	.....	52
.....	.....	.....	.....	.....	53
.....	.....	.....	.....	.....	54
.....	.....	.....	.....	.....	55
.....	.....	.....	.....	.....	56
160 00	165 50	160 00	160 00	160 00	57
.....	.....	.....	.....	.....	58
1,633 50	1,449 00	1,455 75	1,201 50	1,203 75	59
.....	.....	.....	.....	.....	60
.....	.....	.....	.....	.....	61
.....	.....	.....	.....	.....	62
1,975 60	1,901 15	1,683 22	1,433 26	1,408 66	
32 00	112 00	112 00	241 95	112 00	63
1,646 16	1,507 72	1,660 10	1,560 54	1,540 58	64
276 40	251 20	279 40	270 00	273 50	65
6 84	6 08	6 84	6 46	6 84	66
31 27	79 58	40 53	331 61	27 46	67
58 00	37 50	3 00	.....	.....	68
1 15	17 29	17 78	2 16	1 77	69
208 91	210 00	185 00	210 00	210 00	70
17 70	233 35	4 11	.....	.....	71
.....	.....	.....	.....	.....	72
.....	.....	.....	.....	.....	73
.....	.....	.....	.....	.....	74
.....	.....	.....	.....	.....	75
.....	.....	.....	.....	.....	76
.....	4 42	.....	.....	.....	77
.....	.....	.....	.....	.....	78
2,278 43	2,459 14	2,308 76	2,622 72	2,172 15	
32 00	.....	.....	.....	.....	79
11 20	11 20	.....	57 40	75 79	80
.....	.....	.....	.....	.....	81
.....	.....	.....	.....	.....	82
43 20	11 20	.....	57 40	75 79	

Statement of Earnings and Expenditures by Months, November, 1914, to

No.	Power.	June, 1915.	July, 1915.
		$ c.	$ c.
45	Superintendence of power	16 00	16 00
46	Power plant buildings, fixtures and grounds		
47	Power plant equipment		
48	Substation equipment	36 15	
49	Transmission system	25 00	25 00
50	Depreciation of power plant buildings and equipment		
51	Equalization—power		
52	Power plant employees		
53	Fuel for power		
54	Water for power		
55	Lubricants for power		
56	Miscellaneous power plant supplies and expenses		
57	Substation employees	160 00	160 00
58	Substation supplies and expenses		
59	Power purchased	1,183 50	1,246 50
60	Power exchanged—balance		
61	Power transferred—credit		
62	Other operations Cr.		
	Total	1,420 65	1,447 50
	Conducting Transportation.		
63	Superintendence of transportation	112 00	112 00
64	Passenger conductors, motormen and trainmen	1,525 01	1,596 65
65	Freight and express conductors, motormen and trainmen	272 40	279 40
66	Miscellaneous car service employees	6 99	6 99
67	Miscellaneous car service expenses	18 93	147 05
68	Station employees		
69	Station expenses		8 44
70	Carhouse employees	210 00	210 00
71	Carhouse expenses		
72	Operation of signal and interlocking apparatus		
73	Operation of telephone and telegraph lines		
74	Operation of floating equipment		
75	Operation of steam locomotives		
76	Freight and express collection and delivery		
77	Loss and damage	Cr. 1 65	
78	Other transportation expenses		
	Total	2,143 68	2,360 53
	Traffic.		
79	Superintendence and solicitation		
80	Advertising	33 60	28 00
81	Parks, resorts, and attractions		
82	Miscellaneous traffic expenses		
	Total	33 60	28 00

October, 1915, under New Classification effective November, 1914—Con.

August, 1915.	September, 1915.	October, 1915.	Total.	No.
$ c.	$ c.	$ c.	$ c.	
16 00	16 00	16 00	256 68	45
.....	.....	.....	3 42	46
.....	.....	.....	.....	47
25 15	75	953 68	1,331 58	48
25 00	25 00	25 00	429 17	49
.....	.....	.....	.....	50
.....	.....	.....	.....	51
.....	.....	.....	.....	52
.....	.....	.....	.....	53
.....	.....	.....	.....	54
.....	.....	.....	.....	55
.....	.....	.....	.....	56
160 00	160 00	160 00	1,923 00	57
.....	.....	.....	.....	58
1,273 50	1,273 50	1,329 75	16,240 50	59
.....	.....	.....	.....	60
.....	.....	.....	.....	61
.....	.....	.....	.....	62
1,499 65	1,475 25	2,484 43	20,184 35	
112 00	112 00	112 00	1,233 95	63
1,426 82	1,430 76	1,469 13	18,543 14	64
278 00	261 60	270 40	3,264 70	65
6 46	6 46	6 84	83 14	66
9 00	23 85	14 10	1,177 42	67
.....	.....	.....	219 50	68
66 45	2 56	13 63	216 62	69
210 00	210 00	210 00	2,501 41	70
.....	18 21	.....	273 37	71
.....	.....	.....	.....	72
.....	.....	.....	54	73
.....	.....	.....	.....	74
.....	.....	.....	.....	75
.....	.....	.....	.....	76
.....	.....	.....	2 77	77
.....	.....	.....	.....	78
2,108 73	2,065 44	2,096 10	27,516 56	
.....	.....	.....	96 00	79
49 20	28 00	33 60	378 39	80
.....	.....	.....	.....	81
.....	.....	.....	.....	82
49 20	28 00	33 60	474 39	

Statement of Earnings and Expenditures by Months, Effective November,

No.	General and Miscellaneous.	November, 1914.	December, 1914.
		$ c.	$ c.
83	Salaries and expenses of general officers		
84	Salaries and expenses of general office clerks	155 00	155 00
85	General office supplies and expenses	84 49	41 27
86	Law expenses		
87	Relief department expenses		
88	Pensions and gratuities		
89	Miscellaneous general expenses	7 35	90
90	Valuation expenses		
91	Amortization of franchises		
92	Injuries and damages		
93	Insurance	132 96	119 63
94	Stationery and printing		37 50
95	Store expenses		
96	Garage and stable expenses		
97	Rent of tracks and facilities	862 92	Cr. 812 92
98	Rent of equipment	75 90	273 92
99	Other operations ..... Dr		
100	Other operations ..... Cr		
	Total	1,318 62	Cr. 184 72

Statement of Earnings and Expenditures by Months,

No.	General and Miscellaneous.	June, 1915	July, 1915
		$ c.	$ c.
83	Salaries and expenses of general officers		8 39
84	Salaries and expenses of general office clerks	155 00	155 00
85	General office supplies and expenses	4 25	5 00
86	Law expenses		
87	Relief department expenses		
88	Pensions and gratuities		
89	Miscellaneous general expenses		30
90	Valuation expenses		
91	Amortization of franchises		
92	Injuries and damages	100 00	
93	Insurance	94 09	65 95
94	Stationery and printing	10 20	
95	Store expenses		
96	Garage and stable expenses		
97	Rent of tracks and facilities	50 00	135 01
98	Rent of equipment	300 45	295 95
99	Other operations ..... Dr		
100	Other operations ..... Cr		
	Total	713 99	665 60

November, 1914, to October, 1915. Under New Classification, 1914.—Continued.

January, 1915.	February, 1915.	March, 1915.	April, 1915.	May, 1915.	No.
	$ c.	$ c.	$ c.	$ c.	
.....	.....	.....	.....	.....	83
155 00	155 00	155 00	155 00	155 00	84
3 75	4 45	5 84	7 33	4 50	85
.....	.....	.....	.....	.....	86
.....	.....	.....	.....	.....	87
.....	.....	.....	.....	.....	88
5 50	2 25	12 50	1 75	40	89
.....	.....	.....	.....	.....	90
.....	.....	.....	.....	.....	91
.....	.....	.....	.....	.....	92
112 91	112 91	114 12	113 77	113 77	93
58 60	6 21	84 69	5 00	6 00	94
.....	.....	.....	.....	.....	95
.....	.....	.....	.....	.....	96
25 00	25 00	50 00	249 68	50 00	97
75 00	302 70	293 25	282 45	832 80	98
.....	.....	.....	.....	.....	99
.....	.....	.....	.....	.....	100
435 76	608 52	715 40	814 98	1,162 47	

November 1914 to October, 1915.—Continued.

August, 1915.	September, 1915.	October, 1915.	Total.	No.
$ c.	$ c.	$ c.	$ c.	
.....	.....	.....	8 39	83
155 00	155 00	155 00	1,860 00	84
5 00	5 00	4 75	175 63	85
.....	10 00	.....	10 00	86
.....	.....	.....	.....	87
.....	.....	.....	.....	88
29 90	2 00	90	63 75	89
.....	.....	.....	.....	90
.....	.....	.....	.....	91
.....	.....	.....	100 00	92
48 20	48 20	43 37	1,119 88	93
193 37	8 41	27 51	437 49	94
.....	.....	.....	.....	95
.....	.....	.....	.....	96
50 00	177 14	96 69	958 52	97
339 15	354 45	330 15	3,756 15	98
.....	.....	.....	.....	99
.....	.....	.....	.....	100
820 62	760 20	658 37	8,489 81	.....

Comparative Statement of Earnings and Expenditures

No.	Miscellaneous Statistics.	1913 November,	1914 November.	1913 December,	1914 December.
59	Passenger car hours	1,860	2,318	1,908	2,408
60	Mail, baggage, express car hours..	.....	.....	.....	.....
61	Passenger car miles	18,607	24,042	19,080	24,658
62	Mail, baggage, express car miles..	.....	.....	.....	.....
63	Total passengers carried	108,443	116,990	111,853	117,571
64	Average daily receipts	$257 80	$286 69	$262 62.7	284 73.8
65	Average receipts per car hour—passenger	4 05.9	3 27	4 11	3 25.8
66	Average receipts per car mile—passenger	40.6	31.5	41.1	31.8
67	Earnings per passenger	06.9	06.8	06.9	06.6
68	Freight car hours	.....	43	.....	52
69	Freight car miles—loaded	.....	183	.....	239
70	Freight car miles—empty	.....	177	.....	191
71	Average receipts per car hour—freight	.....	$9 77.6	.....	$7 66.3
72	Average receipts per car mile—freight	.....	1 16.8	.....	92.7

Comparative Statement of Earnings and

No.	Miscellaneous Statistics.	1914 April,	1915 April.	1914 May,	1915 May.
59	Passenger car hours	1,907	2,290	2,062	2,275
60	Mail, baggage, express car hours..	.....	.....	.....	.....
61	Passenger car miles	20,022	23,376	21,658	23,390
62	Mail, baggage, express car miles..	.....	.....	.....	.....
63	Total passengers carried	115,348	113,460	124,637	118,138
64	Average daily receipts	$288 61	$291 55.3	$306 00.2	$289 77.7
65	Average receipts per car hour—passenger	4 23.7	3 42.2	4 30.8	3.55.7
66	Average receipts per car mile—passenger	40.4	33.5	41	34.6
67	Earnings per passenger	06.9	06.9	07.1	06.8
68	Freight car hours	.....	31	.....	35
69	Freight car miles—loaded	.....	135	.....	158
70	Freight car miles—empty	.....	157	.....	147
71	Average receipts per car hour—freight	.....	$11 74.3	.....	$8 65.4
72	Average receipts per car mile—freight	.....	1 24.7	.....	99.3

Comparative Statement of Earnings and

No.	Miscellaneous Statistics.	1914 September.	1915 September.	1914 October.	1915 October.
59	Passenger car hours	2,347	2,123	2,413	2,171
60	Mail, baggage, express car hours..	.....	.....	.....	.....
61	Passenger car miles	24,813	21,743	24,913	22,230
62	Mail, baggage, express car miles..	.....	.....	.....	.....
63	Total passengers carried	118,812	108,827	123,199	111,412
64	Average daily receipts	$315 37	$284 98	$314 97.4	$277 51
65	Average receipts per car hour—passenger	3 58.2	3 40.8	3 46.7	3.39.3
66	Average receipts per car mile—passenger	33.9	33.3	33.6	33.1
67	Earnings per passenger	07.1	06.6	06.8	06.6
68	Freight car hours	31	48	51	26
69	Freight car miles—loaded	101	167	232	119
70	Freight car miles—empty	60	200	182	79
71	Average receipts per car hour—freight	$6 03.2	$7 36.4	$11 94.4	$10 04
72	Average receipts per car mile—freight	1 16.1	96.3	1 47.1	1 31.8

by Months, November 1913 to October, 1915.—Continued.

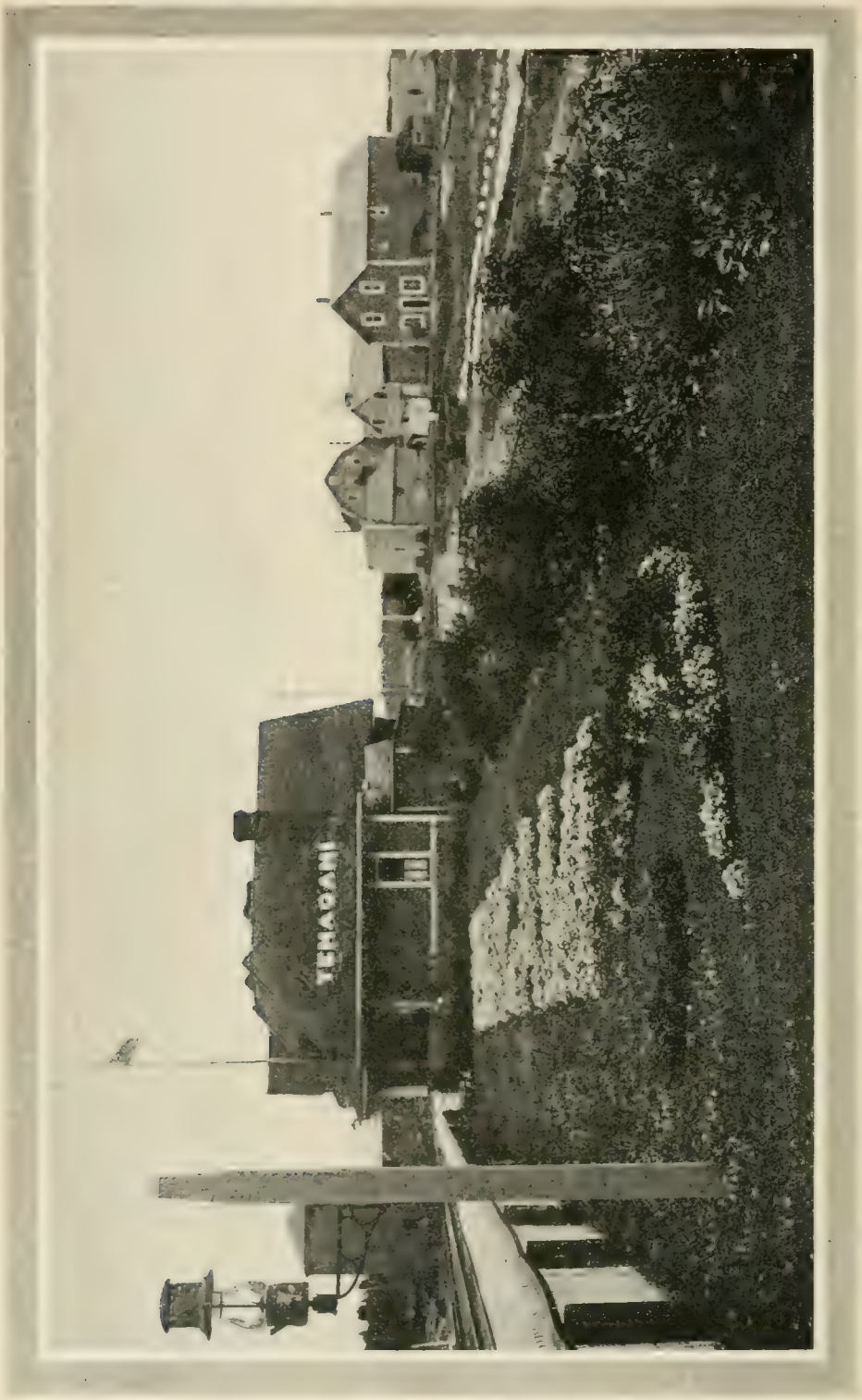
1914 January.	1915 January.	1914 February.	1915 February.	1914 March.	1915 March.	No.
1,972	2,423	1,742	2,185	1,968	2,411	59
.....	.....	.....	.....	.....	.....	60
20,499	24,813	18,189	22,373	20,668	24,690	61
.....	.....	.....	.....	.....	.....	62
100,883	110,436	92,616	100,479	109,576	111,989	63
$237 25.5	$268 05.7	$234 49.9	$265 64.1	$260 44	$277 00.7	64
3 50.5	2 95.9	3 54.7	3 03.2	3 78.6	3 12.3	65
33.7	28.9	33.9	29.6	36	30.5	66
06.8	06.5	06.6	06.5	06.8	06.7	67
.....	50	.....	45	.....	52	68
.....	224	.....	213	.....	245	69
.....	196	.....	162	.....	231	70
.....	$14 62.2	.....	$13 71.3	.....	12 60.2	71
.....	1 74.1	.....	1 04.6	.....	1 37.7	72

Expenditures by Months, etc.—Continued.

1914 June.	1915 June.	1914 July.	1915 July.	1914 August.	1915 August.	No.
1,983	2,239	2,295	2,344	2,419	2,139	59
.....	.....	.....	.....	.....	.....	60
20,820	22,932	24,102	24,002	25,756	21,908	61
.....	.....	.....	.....	.....	.....	62
129,675	117,211	145,412	130,877	135,451	116,512	63
$332 33	$303 04	$371 92.4	$331 62	$352 47	304 59	64
4 70.03	3 64	4 75.1	3 87.5	4 09.6	3 77.6	65
44.3	35.5	45.2	37.8	38.5	36.9	66
07.1	06.9	07.5	06.9	07.3	06.9	67
.....	32	.....	25	118	146	68
.....	141	.....	107	64	124	69
.....	117	.....	80	38	31	70
.....	$8 10.2	.....	$7 52	$5 73.8	$10 42.4	71
.....	1 00.5	.....	1 00.6	1 19.8	1 19.7	72

Expenditures by Months, etc.—Concluded.

1914 Total.	1915 Total.	Increase.	Decrease.	No.
24,876	27,326	2,450	.....	59
.....	.....	.....	.....	60
259,127	280,157	21,030	.....	61
.....	.....	.....	.....	62
1,415,905	1,367,902	.....	48,003	63
$294 98	$288 92.7	.....	$6 05.3	64
4 01.2	3 38.8	.....	62.4	65
38.5	33	.....	05.5	66
07	06.7	.....	00.3	67
120	470	350	.....	68
451	2,077	1,626	.....	69
306	1,861	1,555	.....	70
$8 45.1	$10 37	$1 91.9	.....	71
1 34	1 23.8	.....	10.2	72



Temagami Station, T. & N. O. Railway, 1915.

NIPISSING CENTRAL RAILWAY.

Statement Showing Investment in Road and Equipment, Nov. 1st, 1914 to Oct. 31st, 1915

Way and Structures—		
Engineering	$203 92	
Grading	240 03	
Ballast	197 59	
Ties	304 00	
Rails, fastenings and joints	15 18	
Special work	110 70	
Track and roadway labor	597 31	
Paving	2 00	
Bridges, trestles and culverts	26 95	
Crossings, fences and signs	5 24	
Shops and car houses	728 75	
Stations, miscellaneous buildings and structures	211 94	
		$2,643 61
Equipment—		
Passenger and combination cars	$830 79	
		$830 79
		$3,474 40
Way and Structures—		
Water supply, car barns, North Cobalt	$677 88	
Shelter station, M. P. 104	211 94	
Completion car barns	230 04	
Raising track, Haileybury	2 00	
Siding—Northern Customs Concentrator Co.	1,497 00	
Spur siding to new loading dock, Haileybury	24 75	
		$2,643 61
Equipment—		
Ventilation car heaters	$830 79	
		$830 79
		$3,474 40

NIPISSING CENTRAL RAILWAY

Statement of Wages paid Employees for the Year Ended Oct. 31st, 1915

McDonald, K.	Superintendent	$1,920 00
Crouch, R. J.	Cashier	1,260 00
Miller, N. A.	Stenographer	600 00
Stewart, W. F.	Land Agent	900 00
Duval, T.	Janitress	37 50
Brooks, Mrs. W.	"	14 75
Montgomery, A.	Conductor	1,026 18
Murray, D. R.	"	1,065 07
Holden, E.	"	1,049 88
McAuley, J.	"	1,144 92
Anderson, G.	"	1,034 30
McDonald, A. A.	"	1,061 80
Curry, T. W.	"	991 65
Presley, W.	"	859 89
Moore, N.	"	255 61

Statement of Wages paid Employees for the Year Ended Oct. 31st, 1915—*Cont'd.*

Noble, J.	Conductor	$951 08	
Kilgour, A. H.	"	178 75	
McMillan, H.	"	64 62	
Normandy, B.	"	434 65	
McRae, A. J.	Motorman	1,106 70	
Quinn, P.	"	1,094 50	
Finley, F.	"	1,158 52	
Morell, J. A.	"	885 75	
Lyons, H. C.	"	1,005 42	
Parks, W.	"	938 26	
Richardson, R.	"	960 79	
McIsaac, N.	"	894 87	
Garrison, T.	"	899 65	
Lemieux, P.	"	627 10	
Hoppins, G.	"	566 76	
Carmichael, W.	"	559 02	
Draper, J.	"	141 00	
Moody, F.	Switchman	750 60	
Gagnon, L.	"	81 00	
			$26,520 59

MAINTENANCE AND CONSTRUCTION.

Forrest, D.	Barn foreman	$1,080 00	
Moody, F.	Arm. winder	170 00	
Hines, G.	"	729 35	
Christefaro, A.	Barnman	704 51	
McQuaig, J.	"	720 00	
Davies, J. H.	Barn operator	960 00	
Warner, J.	"	960 00	
Stewart, T. W.	Repairer	24 00	
Montgomery, P.	Blacksmith	631 25	
Andrews, H.	Line foreman	1,200 00	
Carmichael, J.	Lineman	471 60	
Gagnon, L.	"	334 20	
Ball, C.	Groundman	135 00	
Hoppins, G.	Operator	5 00	
Carmichael, W.	Cleaner	38 75	
Draper, J. W.	Repairer	701 85	
Reason, E. G.	Painter	446 08	
Taylor, L.	Painter	346 00	
Simms, T.	Teaming	6 00	
McDonald, R.	Machinist	3 00	
			$9,666 59

KEER LAKE STATION.

Carter, Wm.	Clerk	$180 00	
McDougall, W.	Sanitary work	2 50	
			$182 50

SECTION NO. 1.

Foreman	$821 48	
Laborers	1,272 05	
		$2,093 53

SECTION NO. 2.

Foreman	$955 82	
Laborers	1,633 99	
		$2,589 81
Total		$41,053 02

Detail of Nipissing Central Railway Accounts payable for fiscal year ending October 31st, 1915

ALEXANDER & CABLE LITHOGRAPHING CO., LTD., TORONTO.

1128—Letter heads	$10 00	
		$10 00

H. ANDREWS, NORTH COBALT, ONT.

1215—Cartage	$0 75	
		$0 75

CORPORATION OF TOWNSHIP OF BUCKE, NORTH COBALT, ONT.

973—Taxes	$1,178 77	
		$,178 77

BEGG BROS., NORTH BAY, ONT.

1054—Tape	$1 00	
1127— "	60	
		$1 60

CHAS. COURTEMANCHE, NORTH COBALT, ONT.

969—Rent of postoffice drawer	$3 00	
1164— " "	3 00	
		$6 00

COBALT DAILY NUGGET, LTD., COBALT, ONT.

871—Subscription	$3 00	
1032—Advertising	15 00	
1114—Time tables	7 00	
1129— "	10 00	
1159—Advertising	26 59	
1166—Time tables	10 00	
		$71 59

CANADIAN GENERAL ELECTRIC CO., LTD., TORONTO.

977—Soldering paste	$3 96	
1009—Electrical material	11 34	
992— " "	18 66	
1002— " "	3 76	
1045—Adjusting generator	119 10	
1019—Electrical material	182 02	
1034— " "	11 10	
1058— " "	14 40	
1074—Repairing generators	173 75	
1101—Electrical material	11 52	
1174— " "	44 40	
1233— " "	6 50	
1198— " "	852 60	
		$1,453 11

COCHRANE HARDWARE CO., LTD., NORTH BAY, ONT.

979—Hardware	$0 53	
990— "	2 19	
1017— "	45	
1036— "	30	
1067— "	65	
1131— "	15	
		$4 27

CANADIAN WESTINGHOUSE CO., LTD., HAMILTON, ONT.

981—Electrical material	$10 26	
1039—Lamps	12 70	
1099 Electrical material	31 34	
1229— " "	17 50	
1200— " "	15 35	
		$87 15

CAMPBELL & MCDIARMID, NORTH BAY, ONT.

988 Uniforms	$577 50	
		$577 50

CANADA PAINT CO., LTD., MONTREAL, QUE.

1004—Shellac	$8 75	
1043—Paint	2 50	
1056— "	3 11	
		$14 36

CANADIAN CONSOLIDATED RUBBER CO., LTD., TORONTO.

1035—Hose	$7 44	
1087— "	3 67	
		$11 11

CANADIAN EXPRESS CO., TORONTO, ONT.

1162—Express charges	$12 45	
1217— "	55	
		$13 00

CROUSE HINDS CO. OF CANADA, LTD., TORONTO, ONT.

1037—Springs	$4 66	
1231—Clutches and globes	14 20	
		$18 86

JAMES A. COLE & COMPANY, NORTH BAY, ONT.

1041—Flooring	$10 00	
		$10 00

CANADA METAL CO., LTD., TORONTO, ONT.

1038—Solder	$12 15	
		$12 15

CANADIAN STEEL FOUNDRIES LTD., MONTREAL, QUE.

1069—Switch tongues	$110 00	
1089—Springs	2 40	
		$112 40

R. J. CROUCH, CASHIER, NORTH COBALT, ONT.

1117—Commission on advertising	$13 16	
1121— " "	6 58	
1098— " "	6 58	
1157— " "	1 12	
1130— " "	5 13	
1211— " "	2 52	
1190— " "	5 12	
1227— " "	2 00	
1226— " "	3 00	
		$45 21

DAWSON CO. LTD., MONTREAL, QUE.

983—Trolley clamps	$29 25		
1006— " harps	26 40		
1060— " wheels	115 00		
1145—Leatheroid	3 85		
1132—Lockwashers	1 88		
1199— "	75		
			$177 13

DENNIS WIRE & IRON WORKS CO., LTD., LONDON, ONT.

1008—Office grille	$17 00	
		$17 00

DAGENAIS & POISSON, NORTH COBALT, ONT.

1070—Livery	$1 50	
		$1 50

DAY & GORDON, HAILEYBURY, ONT.

1082—Legal advice	$5 00	
		$5 00

DOMINION EXPRESS CO., TORONTO, ONT.

1202—Express charges	$2 40	
		$2 40

H. DISSTON & SONS, LTD., TORONTO, ONT.

1204—Hacksaw blades	$3 18	
		$3 18

ELECTRIC RAILWAY JOURNAL, NEW YORK, N.Y.

986—Subscription	$4 50	
1187— "	4 50	
		$9 00

EMPLOYERS LIABILITY ASSURANCE COR., LTD., TORONTO.

1189—Renewal premiums	$8 39	
		$8 39

C. L. FERGUSON, PAYMASTER, NORTH BAY, ONT.

975—Payrolls	$3,720 88	
1000— "	3,846 75	
1010—Disbursements on petty account	4 95	
1033—Payrolls	3,788 60	
1052— "	3,524 75	
1097— "	3,676 07	
1090— "	3,412 13	
1143— "	3,340 33	
1120— "	3,219 61	
1185— "	3,277 83	
1160— "	3,092 82	
1213— "	3,012 76	
1196— "	3,140 49	
		$41,057 97

FROTHINGHAM & WORKMAN, LTD., MONTREAL, QUE.

1047—Steel	$0 22	
		$0 22

F. R. Gibson, North Cobalt, Ont.

1051—Plumbing	$338 44	
1219—Repairs to gutter	21 50	
		$359 94

Hydro-Electric Power Commission of Ontario, Toronto, Ont.

1040—Lamps	$27 50	
1071— "	47 00	
1201— "	42 00	
		$116 50

Hamilton Stamp & Stencil Co., Ltd., Hamilton, Ont.

1073—Stamps	$0 30	
		$0 30

Hamilton Bridge Works Co., Ltd., Hamilton, Ont.

1103—Angle bars	$2 50	
		$2 50

E. A. Harper, North Cobalt, Ont.

1102—Filling shaft	$9 62	
		$9 62

Municipality of Town of Haileybury, Ont.

1169—Taxes on lots	$7 72	
1206— "	7 73	
		$15 45

George H. Hees, Son & Co., Ltd., Toronto, Ont.

1203—Moss	$0 65	
		$0 65

Imperial Oil Co., Ltd., Toronto, Ont.

985—Grease	$9 99	
994—Oil	13 13	
1044—Claim No. 9448	4 42	
1075—Engine oil	13 00	
1147—Grease	11 52	
1134—Engine oil	13 58	
1235—Grease	10 83	
		$76 47

Minister of Inland Revenue, Ottawa, Ont.

1183—War tax	$13 25	
1214— "	10 15	
		$23 40

Jackson Press, Kingston, Ont.

1012—Forms	$19 50	
1014— "	11 00	
1021— "	19 25	
1077— "	29 00	
1105— "	23 75	
1149— "	6 00	
1237— "	7 50	
1208— "	9 75	
		$125 75

KERRY & CHACE, LTD., CONSULTING ENGINEERS, TORONTO, ONT.

1026—Services rendered	$9 38	
1176— "	179 17	
1210— "	88 50	
		$277 05

LONDON ROLLING MILLS CO., LTD., LONDON, ONT.

1049—Iron	$10 04	
		$10 04

LAING & MACKIE, NORTH BAY, ONT.

1086—Mirror	$1 25	
		$1 25

MUIR CAP CO., TORONTO, ONT.

937—Caps	$46 00	
		$46 00

JOHN MILLEN & SON, LTD., TORONTO, ONT.

989—Trolley poles, etc.	$51 00	
996—Fibre rope hooks	28 50	
1023—Mats bushings	183 00	
1062—Bushings	50 00	
1091—Spindles	22 67	
1133—Mats	119 70	
1151—Ball bearings, etc.	23 73	
1136—Trolley poles	109 80	
1176—Linen tape	8 80	
1212—Axles and bushings	102 50	
		$699 70

JAMES MUNROE, NORTH COBALT, ONT.

1013—Drilling test hole	$105 00	
1104—Filling shaft	6 87	
		$111 87

GEORGE MITCHELL, SOLICITOR, COBALT, ONT.

1221—Legal services	$10 00	
		$10 00

K. McDONALD, SUPERINTENDENT, NORTH COBALT, ONT.

1015—Expenses	$26 10	
		$26 10

A. A. McROBERTS, NORTH BAY, ONT.

1066—Expenses	$7 30	
		$7 30

WESLEY McKNIGHT, NEW LISKEARD, ONT.

1092—Uniforms	$416 00	
		$416 00

NORTHERN ONTARIO LIGHT & POWER CO., LTD., COBALT, ONT.

991—Power	$1,377 00	
993—Current, Kerr Lake	3 77	
1016—Power	1,613 25	
1053— "	1,633 50	
1072— "	1,449 00	

NORTHERN ONTARIO LIGHT & POWER CO., LTD., COBALT, ONT.—*Cont'd.*

1107—Current, Kerr Lake	$2 73	
1123—Power	1,455 75	
1095—Current, Kerr Lake	10 99	
1094—Disconnecting switches	21 00	
1106—Current, Kerr Lake	2 09	
1108—Power	1,201 50	
1171—Current, Kerr Lake	1 77	
1177—Power	1,203 75	
1140— "	1,183 50	
1191—Current, Kerr Lake	1 45	
1197—Power	1,246 50	
1168—Current, Kerr Lake	1 45	
1192—Power	1,273 50	
1239— "	1,273 50	
1241—Current, Kerr Lake	2 81	
1228—Power	1,331 76	
		$16,290 57

NORTHERN ELECTRIC CO., LTD., TORONTO, ONT.

1225—Wire	$18 34	
1081— "	14 52	
1135—Electrical material	7 50	
1138— " "	4 60	
1178— " "	6 25	
		$51 21

NICHOLSON FILE CO., PORT HOPE, ONT.

997—Tapers	$1 42	
1048—Files	10 29	
1079— "	4 16	
		$15 87

NATIONAL DRUG & CHEMICAL CO. OF CANADA, LTD., TORONTO, ONT.

999—Chemicals	$1 91	
1216— "	60	
		$2 51

NORTHERN LUMBER MILLS, LTD., NORTH COBALT, ONT.

995—Lumber	$1 26	
		$1 26

NATIONAL EQUIPMENT CO., LTD., TORONTO, ONT.

1001—Tank and fittings	$299 00	
		$299 00

NORTHERN CUSTOMS CONCENTRATOR, LTD., COBALT, ONT.

1024—Siding rebate	$970 00	
1057— "	92 00	
1046— "	102 00	
1061— "	102 00	
1119— "	48 00	
1084—O/C on siding rentals	46 00	
1137—Siding rebate	94 00	
1124— "	89 00	
		$1,543 00

NORTHERN CANADA SUPPLY CO., LTD., COBALT, ONT.

1093—Keys	$3 00	
		$3 00

NIPISSING MINING CO., LTD., COBALT, ONT.

1224—Rental of right-of-way	$2 00	
		$2 00

OHIO BRASS COMPANY, MANSFIELD, OHIO.

1083—Electrical material	$61 16	
		$61 16

ESTATE OF PAUL B. PATTEN, SALEM, MASS.

1003—Ticket destroyer	$80 00	
		$80 00

PILKINGTON BROS., LTD., TORONTO, ONT.

1018—Glass	$9 22	
1027— "	18 35	
1139— "	19 80	
		$47 37

PRESTON CAR & COACH, LTD., PRESTON, ONT.

1126—Springs	$28 25	
		$28 25

WILLIAM SCULLY, MONTREAL, QUE.

1005—Buttons	$5 41	
1088— " and caps	64 50	
		$69 91

W. F. STEWART, NORTH COBALT, ONT.

998—Commission on land sales	$11 25	
1111— " "	13 00	
1100— " "	3 75	
1163— " "	8 75	
1230— " "	16 75	
		$53 50

STEEL COMPANY OF CANADA, TORONTO, ONT.

1042—Brass screws	$24 19	
1050—Nuts	3 91	
1109—Screws	1 44	
1153— " and iron	3 10	
		$32 64

J. SIMS, COBALT, ONT.

1161—Cartage	$2 00	
		$2 00

SCYTHES & CO., LTD., TORONTO, ONT.

1122—Carriage duck	$11 64	
		$11 64

SAMSON CORDAGE WORKS, CHICAGO, ILL.

1142—Signal cord	$6 87	
		$6 87

SOUTHAM PRESS LIMITED, TORONTO, ONT.

1182—Tickets	$185 00	
		$185 00

PETER SMITH HEATER CO., DETROIT, MICH.

1218—Heaters and equipment	$600 00	
		$600 00

TEMISKAMING TELEPHONE CO., LTD., NEW LISKEARD, ONT.

967—Telephone rental, Kerr Lake Station	$25 00	
1009— " service	1 35	
1020— " "	90	
1068— " "	1 15	
1080—Tolls	1 10	
1063—Telephone rental, North Cobalt	12 50	
1096—Telephone service	60	
1110— " "	1 15	
1173— " "	85	
1195— " "	30	
1172— " "	26 90	
1125— " "	2 00	
1232 " "	90	
		$74 70

TREASURER OF ONTARIO, TORONTO, ONT.

1194—Proceeds from operation	$25,000 00	
		$25,000 00

THOMSON, TILLEY & JOHNSTON, SOLICITORS, TORONTO, ONT.

1148—Professional services	$100 00	
		$100 00

THE THOMAS CO., NORTH BAY, ONT.

1146 Receipt books	$0 20	
		$0 20

TALLMAN BRASS & METAL CO., HAMILTON, ONT.

1144—Brass rod	$33 90	
		$33 90

THOMPSON & DALE, TORONTO, ONT.

1223—Premium on insurance	$325 49	
		$325 49

TEMISKAMING & NORTHERN ONTARIO RAILWAY, TORONTO, ONT.

1011—Rental joint facilities	$862 92
1028— " "	862 92
1030—Per diem, freight charges, duty, etc.	300 13
1059—Rental joint facilities	862 92
1078— " "	862 92
1076—Per diem, coal, stationery, freight charges and labor	952 44
1115—Per diem, freight charges, stationery and insurance premiums	884 17
1125—Rental joint facilities	887 92
1112—Rental joint facilities	887 92
1116—Per diem, freight charges, insurance and labor	1,093 00
1165—Freight charges duty, express charges and material for repairs to cars	123 41
1167—Per diem	247 95
1179 Rental joint facilities	887 92
1181—Per diem	509 85
1150—Oil	30 96
1152—Per diem	295 45
1154—Labor, lifting track and painting station	106 79

TEMISKAMING & NORTHERN ONTARIO RAILWAY, TORONTO, ONT.—*Continued.*

1158—Rental joint facilities	$887 92	
1193—Special service, Thiel Detective Service, proportion of constable's salary and lighting station	179 51	
1205—Ties, stationery, cotton waste, paint, duck, shovels	239 59	
1207—Rental joint facilities	887 92	
1209—Per diem	220 95	
1170—Refund account, B-C 24796, paid N. C. R. in error	59 40	
1184—Per diem	264 15	
1186—Coal, stationery, ties, rails and freight charges	279 33	
1188—Rental joint facilities	887 92	
1243—Per diem, coal, stationery, oil and waste and labor	654 53	
1247—Rental joint facilities	887 92	
1234—Coal, ties, per diem, etc.	779 26	
1236—Expenses and freight charges	2 08	
1238—Duty on materials	211 88	
1222—Rental joint facilities	887 92	
1240—Interest on advance	23,233 90	
		$41,153 77

UNITED TYPEWRITER CO., LTD., TORONTO, ONT.

1029—Copying	$5 50	
		$5 50

WARWICK BROS. & RUTTER, LTD., TORONTO, ONT.

1031—Forms	$39 35	
1065—Forms	22 50	
		$61 85

WALKERVILLE HARDWARE CO., LTD., WALKERVILLE, ONT.

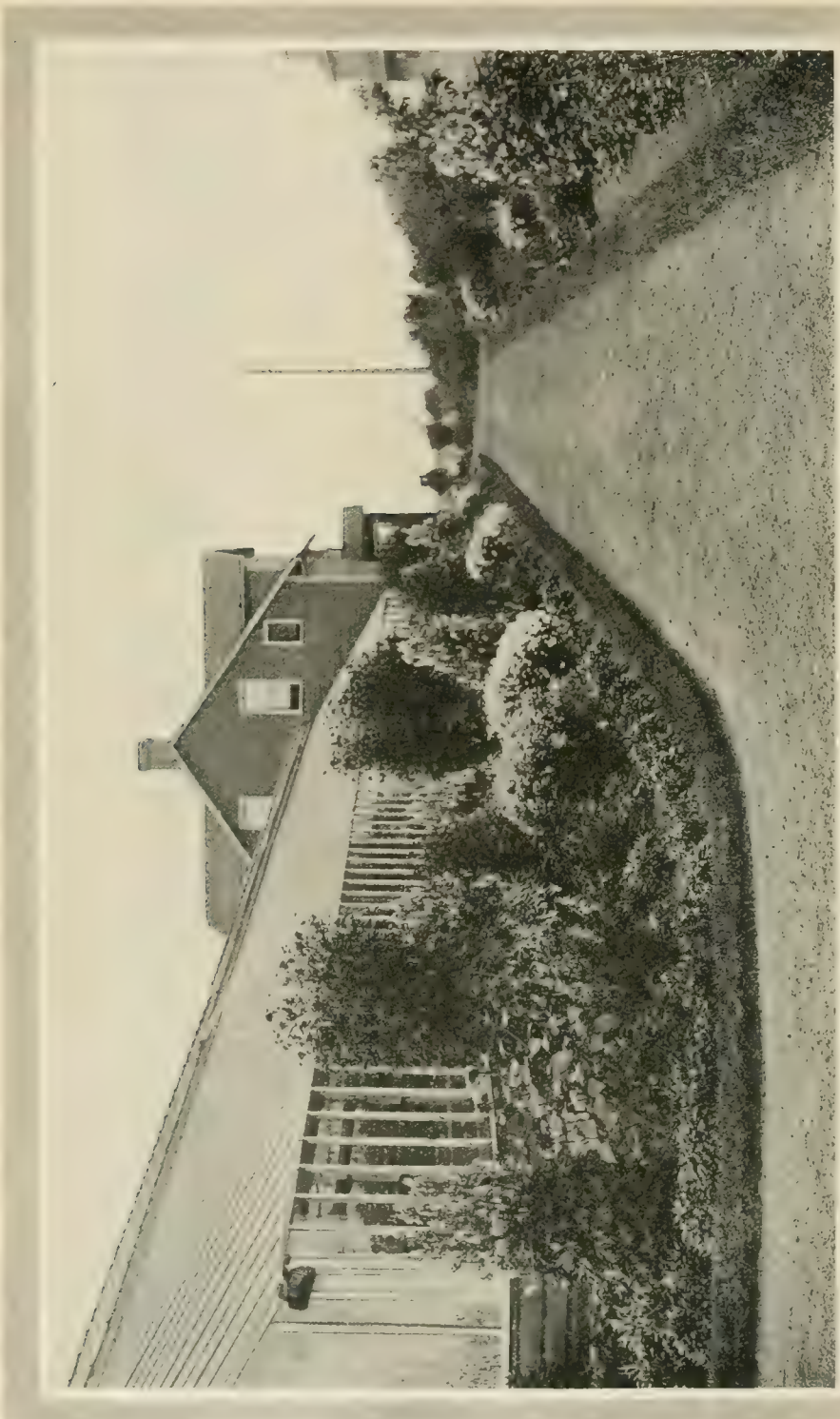
1113—Paint	$16 50	
		$16 50

WARE IRON WORKS, LTD., NEW LISKEARD, ONT.

1022—Forging scraper, etc.	$0 60	
1064—Brake shoes	83 28	
1085—Brake shoes	150 00	
1141—Brake shoes and gears	81 13	
1155—Brake shoes	109 91	
1156— "	81 33	
1180— "	47 85	
1245— "	37 52	
1220— "	19 50	
		$611 12

YOUNG COMPANY, LTD., NORTH BAY, ONT.

1055—Supplies	$3 60	
		$3 60
Total		$134,018 90



Greenhouse at Englehart, T. & N. O. Railway, September, 1915.

INDEX

	Page
Officials of T. & N. O. Railway	6
General Remarks	7
Auditor's Report	12
Insurance—Fire	14
Counsel's Report	15
Report of Chief Engineer and Superintendent of Maintenance	17
New Lines, Surveys and Construction	17
Additional Yard Facilities Completed during the Year	17
Additional Yard Facilities under Construction at Close of Year	18
Industrial Tracks Constructed	18
New Buildings	19
Maintenance of Way	20
General Remarks	22
Accidents	22
Motive Power and Car Department	25
Shops	25
New Rolling Stock	25
Air Brake Equipment	26
Repairs to Locomotives	27
Engine Despatch	28
Locomotive Mileage	28
Repairs to Passenger Equipment	29
Repairs to Freight and Work Equipment	31
Equipment Owned	34
Report of Road Department	37
Maintenance of Track and General Remarks	37
New Steel Laid	37
Old Steel Released	37
Other Rail Removed from Track	38
Cross Ties Used	38
Sets of Switch Ties Used	39
New Under Culverts	39
New Side Culverts	39
New Tile Drain	40
Cinders Handled	41
Miscellaneous Materials Handled by Work Trains	41
Material Handled by Work Train with Ditcher	43
Track Re-surfaced	44
Ballast Loaded	45
Sidings Laid and Extended	47
Sidings Shortened and Taken Up	47
Right-of-Way Cleared	49
Station Grounds Cleared	49
Road Way Improvement, etc.	49
Public Road Crossings	51
Private Road Crossings	51
Ditching—Hand Work	51
Clay Cuts Cleaned and Ditched (Machine Work)	52
Land Slides and Wash-outs	52
Fences	53
Timber, Bridges, etc., Filled	54
Main Line Reballasted	54
Ballast Loaded	57
Cinders Handled	58
Report of Bridge and Building Department	61
Buildings	61
Tanks	64
Dwellings	66
General Work	67
Bridges and Trestles	67
Culverts	68

PAGE

Report of Telegraph and Telephone Department 70
Commercial Telegraph Business Handled 70
Commercial Telephone Business Handled 70
Report of Superintendent of Traffic 73
Alleged Accidents 74
Physicians 75
Report of General Freight and Passenger Agent 79
Statement of Baggage, Corpses and Bicycles handled 80
Statement of Baggage Claims 81
Statement of Credits—Baggage 81
Report of Land Department 83
Mining Engineer—Preliminary Report 87
Stores Department—Purchases and Issues 94
Financial Statements 97
General Balance Sheet 98
Expenditure on Construction 99
Detailed Statement of Charges to Construction 99
Comparative Statement, Earnings and Expenses, 1905 to 1915 102
Comparative Statement, Earnings and Expenditures by Months 104
Statement of Earnings and Expenditures—New Classification 126
Freight Traffic Movement 145
Statistics—Comparative Passenger and Freight Statement 146
Equipment Owned 147
Tonnage Statement 148
Forest Products 148
Passengers—Revenue—One Mile 149
Materials and Supplies on Hand 149
Traffic and Mileage Statistics 153
Statement of Land Purchased 154
Townsite Report 156
Townsite Accounts 156
Average Wages 157
Detailed Statement of Wages Paid Employees 159
Detailed Statement of Expenditures 179
Contracts, Agreements, etc. 356
Canadian Pacific Railway Company—Telegraph 356
Town of Cochrane—Water Supply 358
New Steel Equipment—The Pullman Company 361
Rail Contract—Algoma Steel Corporation 362
Dome Mines Company, Limited—Pipe Line 365
Restaurant Privileges—Temagami—A. Stevens 368
Restaurant Privileges—Englehart—A. Stevens 372
Contracts Extended 377
Nipissing Central Railway 379
Report of Chief Engineer and Superintendent of Maintenance 379
Agreement re Street Car Advertising 380
General Balance Sheet 383
Comparative Statement of Earnings and Expenditures 384
Statement of Earnings and Expenditures—New Classification 404
Comparative Statement of Earnings and Expenditures by months 418
Investment in Road and Equipment, Nov. 1st, 1914, to Oct. 31st, 1915 421
Statement of Wages Paid Employees 421
Details of Expenditures 423

Temiskaming and Northern Ontario Railway Commission

THE MINING INDUSTRY

IN THAT PART OF

NORTHERN ONTARIO

SERVED BY THE

Temiskaming and Northern Ontario Railway

ONTARIO GOVERNMENT RAILWAY

HON. W. H. HEARST, PREMIER

COMMISSION:

J. L. ENGLEHART, Chairman

DENIS MURPHY GEO. W. LEE

W. H. MAUND, Sec.-Treas.

(Appendix to Annual Report Temiskaming and Northern Ontario Railway Commission)

CALENDAR YEAR 1915

By ARTHUR A. COLE

Mining Engineer

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:

Printed and Published by A. T. WILGRESS, Printer to the King's Most Excellent Majesty

1916

Printed by
WILLIAM BRIGGS
Corner Queen and John Streets
TORONTO

To His Honour John Strathearn Hendrie, C.V.O., a Lieutenant-Colonel in the Militia of Canada.

Lieutenant-Governor of the Province of Ontario.

May it Please Your Honour:

The undersigned has the honour to present to Your Honour Report of the Mining Engineer of the Mining Industry in that part of Northern Ontario served by the Temiskaming and Northern Ontario Railway for the calendar year 1915.

Respectfully submitted,

F. G. Macdiarmid,

Minister of Public Works.

Hon. Finlay G. Macdiarmid,

Minister of Public Works,

Toronto.

Sir,—I have the honour, by direction, to submit to you, Report of the Mining Engineer on the Mining Industry, in that part of Northern Ontario served by the Temiskaming and Northern Ontario Railway, for the calendar year 1915.

I have the honour to be,

Sir,

Your obedient servant,

W. H. Maund,

Secretary-Treasurer.

TEMISKAMING AND NORTHERN ONTARIO RAILWAY COMMISSION

J. L. ENGLEHART, Chairman..

DENIS MURPHY, Commissioner.

GEO. W. LEE, Commissioner.

W. H. MAUND, Secretary-Treasurer.

A. A. COLE, Mining Engineer.

The Dome Mines, Ltd. General view, showing mill, power house, and No. 2 development shaft.

GENERAL

The business depression which resulted from war conditions was felt in the mining industry of the Temiskaming district, but to a much smaller extent than in many other lines of business activity. The falling off in the production of silver was more than made up by the increase in the production of gold, so that the combined production of the precious metals shows an increase of over one million dollars over 1914.

Ontario has now become the largest gold and silver-producing Province in Canada, and it is largely the Cobalt and Porcupine Camps that have placed her in this position. Ontario produces 44 per cent. of Canada's gold and 87 per cent. of her silver.

The huge sums of money spent on this continent for war munitions resulted in the accumulation of large dividends and stock profits, and of this surplus money much was available for mining enterprises. At the same time, claim-holders were more ready than formerly to listen to reasonable propositions and, as a consequence, there was much activity in the mining districts, and many prospects changed hands to interests that are more likely to proceed with active development.

The importance of the mining industry to the T. & N. O. Railway is shown in a comparative table compiled according to the amount of business attributable to each industry. The percentages are practically the same, whether tonnage or value is considered, as the commodities are mixed in all cases:—

DISTRIBUTION OF GROSS FREIGHT REVENUE FOR THE TEMISKAMING AND NORTHERN ONTARIO RAILWAY,

Year, 1915.

——	Percentage.	Whole Tons.	Revenue.
			$ c.
Mining	46	321,140	445,843 34
Agriculture	22	153,589	212,684 16
Lumbering	12	83,776	118,608 36
Miscellaneous and through	20	139,626	200,206 83
Total	100	698,131	$977,342 69

INCREASED COST OF SUPPLIES.

Increased cost of supplies has raised production costs of all metals, but this has been more or less compensated by an all-round rise in price, except in the case of gold and silver. It is these precious metals also that are chiefly affected by the rise in milling costs. The following statement gives comparative prices on some of the more important commodities used in mining and milling in Cobalt:—

COMPARATIVE STATEMENT OF PRICES

(ANTE-BELLUM AND CURRENT),

ON SOME COMMODITIES USED IN MINING AND MILLING AT COBALT.

Article.	Ante-Bellum.		March, 1916.	
	$ c.	$ c.	$ c.	$ c.
Mine Supplies—				
Explosives—F.O.B. Cobalt car load lots 40%	12 98		19 58	
" " " 50%	14 48		22 33	
" " " 60%	15 98		25 08	
Detonators—per 1,000, No. 6	10 00		22 80	
" " No. 8	14 00		39 75	
Safety Fuse—per case, 6,000 feet	26 35		30 10	
Steel—F.O.B. Montreal—per pound—drill	06–	06½	08–	08½
" " " hollow	12		16–	18
" " " tool	70–	80	3 00–	4 00
" " " plate	1 80		2 60	
Fuel Oil—per gallon—tank cars	06½		13	
Gasoline "	20		37	
Milling Supplies—				
Aluminum Dust—per pound	34–	38	75–	90
Caustic Soda—per 100 pounds	1 30		7 50	
Chrome Steel Balls—per 100 pounds	4 16		7 58	
Cyanide—contract, per pound	15		16	
" no contract, per pound	15		20–	25
Mercury—per flask, 75 pounds	37 00		200 00–300 00	
Pebbles—per ton, F.O.B. New York—French	9 75		13 25	
" " " Danish	13 00		15 00– 16 00	
Soda Ash—per 100 pounds	1 27		3 91	
Sulphuric Acid "	1 30		1 95	
Zinc Dust—per pound	06½		33–	35

Mining machinery has advanced 20% to 30%.
Electrical equipment, 50% to 60%.

Cost of production is not a fixed figure but varies from time to time, even under normal conditions. By the introduction of better methods, treating larger tonnages, and general economies the careful manager is always trying to reduce his production costs. A comparison of production costs before the war and now will not, therefore, in all cases show the result of increased cost of material, as this increase may be offset by better practice. Thus, in the case of the Nipissing low-grade mill, notwithstanding an increase of 20c. per ton of ore treated in the cost of supplies, the total cost of treatment was reduced 7c. per ton during the year. At this mill also the present high war cost of aluminum dust will make it necessary to substitute some other method of precipitation when the present contract for dust expires. Experiments on a large scale are now being carried on with the use of sodium sulphide as a precipitant, the resulting silver sulphide being desulphurized by the use of aluminum ingots in a caustic soda solution, before being melted down to bullion. The results so far are satisfactory, and it is likely that this procedure will be adopted. Mining costs at Cobalt all show increases, and this may be illustrated by the selection of an individual case. At this mine the actual cost of underground drifts and crosscuts has increased 39c. per ton over the cost before the war. Of this amount, 32c. has been caused by the rise in price of explosives, and 7c. has been caused by the rise in the price of fuse, caps and steel. In shaft work, the increased cost is 32c. per ton. Stoping cost has increased from 10c. to 15c. per ton, depending on the width of stope, hardness of rock, and so forth.

At Porcupine the increased cost of supplies may be judged by the following table, compiled by the Canadian Mining & Finance Co., Ltd.:—

COMPARATIVE STATEMENT OF PRICES
(ANTE-BELLUM AND CURRENT),
ON COMMODITIES USED IN MINING AND MILLING AT PORCUPINE.

Article.	Ante-Bellum.	March, 1916.	Approximate Advance.
Mine Supplies—	$ c.	$ c.	Per cent.
Dynamite, 1¼ in., 40%.....per cwt...	13 10	19 70	50
" " 50%..... " ..	14 60	22 45	52.5
Detonators, No. 8.....per 1,000..	12 60	39 70	215
Safety Fuse.....per case..	23 95	28 20	18
Time Fuses.....per 1,000 .	5 40	10 25	90
Tamping Bags..... " ..	1 60	2 00	25
Connecting Wire.....per lb...	50	70	40
Rails.....per ton..	43 00	57 50	33
Track Spikes.....per keg..	3 25	4 50	39
Track Bolts..... " ..	6 00	9 00	50
Shovels.....per doz...	7 60	9 00	18
Mill Supplies—			
Borax.....per lb...	11¾	17¼	47
Cyanide..... " ..	15	24	60
Zinc Dust..... " ..	06¾	27	427
Muriatic Acid.....per cwt...	1 70	2 93	80
Soda Ash..... " ..	2 25	3 59	57
Lead Acetate..... " ..	8 10	14 30	75
Crucibles.....number..	07½	13	74
Fuel Oil.....per gal...	09	13½	51
Pig Lead.....per cwt...	5 65	10 06	78
Litharge..... " ..	5 65	12 60	127
Zinc Spelter..... " ..	6 48	17 25	276
Pebbles—Danish.....per ton..	22 03	26 80	22
Globe Liners.....per lb...	03¼	03½	8
Shoes and Dies.....per cwt...	4 85	6 65	37
Cams.....each..	20 26	23 20	14.5
Cam Shaft..... " ..	83 00	90 00	8.5
General Supplies—			
Lubricating Oils			10
Gasoline			65
Corrugated Iron			50
Iron and Soft Steel			50
Pipe			60
Nails			40

The advanced price of explosives has added 10c. per ton to mining costs, and the prospects are that prices will continue to rise till the end of the war. Milling costs at the Hollinger will be increased approximately 7c. per ton owing to the advanced price of zinc dust. At the beginning of hostilities this company contracted for a supply of zinc dust sufficient to last them eighteen months. This supply will soon be consumed and they have been forced to make new contracts at more than double the old contract price. Other chemicals and supplies have steadily advanced in price, and they estimate that their working costs will be at least 20c. per ton higher than they would be with normal prices prevailing.

At the Dome Mine mining and milling costs have advanced from 16 per cent. to 18 per cent. above normal on account of increased cost of supplies. At some of the mines for their underground work ammonia powder is now being used where the ventilation is good, and in this way the increased cost of explosives is offset to a certain extent. In some of the milling practice also it has been found that economies can be effected by the use of smaller quantities of zinc dust and cyanide.

GOLD

Ontario's gold production is steadily increasing, and, as formerly, most of the production came from Porcupine, but Kirkland Lake and Munro Districts also assisted.

Porcupine

At Porcupine the following mines produced gold during the year, and in almost all cases showed increases over 1914. They are as follows:—Hollinger, Dome, Acme, McIntyre, Porcupine Crown, Vipond, Dome Lake, Gold Reef, Schumacher, Porcupine Pet, Mines Leasing Co. (Rea), Porphyry Hill, and Excelsior.

The steady advance of the Porcupine camp is shown in the following production table:—

PORCUPINE GOLD PRODUCTION, 1910–1915.

Year.	Value.
	$
1910	35,539
1911	17,187
1912	1,730,628
1913	4,284,928
1914	5,203,229
1915	7,580,766
Total	18,852,277

Power.

Production was curtailed in the early part of the year due to low water resulting in a shortage of power for operating the mines, and this condition was not relieved until the second week in April. Most of the mines have made provision for this contingency by installing auxiliary steam plants, and these now amount to about 2,500 h.p. In order to meet the rapidly increasing demand for power in the Porcupine camp the Northern Canada Power Company is installing at Sandy Falls a 2,500 h.p. Canadian General Electric generator, direct connected to an I. P. Morris water-wheel, with surge tank and wooden stave penstock and controlling valves. This company also proposes to install during 1916 a 4,000 h.p. unit at Wawaitin. These additions when completed will give the Wawaitin power plant a capacity of 11,000 h.p. and the plant at Sandy Falls a capacity of 5,000 h.p. Conservation dams to prevent a shortage of water are also being constructed.

HOLLINGER GOLD MINES, LIMITED.

The following notes have been compiled from the Fifth Annual Report of the Hollinger Gold Mines, Limited, covering operations for the year 1915.—

RECORD.

Year.	Tons of Ore Milled.	Value Recovered.	Dividends Paid.
		$ c.	$
1911	1,000	46,082 52	.....
1912	45,195	933,682 00	270,000
1913	138,291	2,466,220 24	1,170,000
1914	208,936	2,688,354 80	1,170,000
1915	334,749	3,249,698 33	1,560,000
Totals	728,171	9,384,037 89	4,170,000

The Canadian Mining & Finance Co., Ltd. Central shaft headframe. 21st February, 1916.

INCOME AND EXPENSES FOR THIRTEEN PERIODS OF THE YEAR 1915.

Period ending	Bullion produced.	Other Income.	Total Income.	Operating Expenses.	Gross Profits.	Added to Surplus.
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Jan. 28	240,208 27	1,380 75	241,589 02	90,602 47	150,986 55	30,986 55
Feb. 25	242,775 51	1,260 84	244,036 35	89,321 46	154,714 89	34,714 89
Mar. 25	238,052 00	3,403 83	241,455 83	90,451 07	151,004 76	31,004 76
Apl. 22	223,037 29	3,678 90	226,716 19	85,259 07	141,457 12	21,457 12
May 20	212,323 61	11,526 42	223,850 03	84,662 69	139,187 34	19,187 34
June 17	214,582 15	6,693 70	221,275 85	95,355 01	125,920 84	5,920 84
July 15	211,130 68	6,702 53	217,833 21	93,611 00	124,222 21	4,222 21
Aug. 12	238,712 00	6,821 29	245,533 29	97,244 42	148,288 87	27,288 87
Sept. 9	238,304 87	6,189 39	244,494 26	94,559 22	149,935 04	29,935 04
Oct. 7	243,606 43	6,024 29	249,630 72	91,288 50	158,342 22	38,342 22
Nov. 4	274,759 48	8,785 27	283,544 75	98,775 94	184,768 81	64,768 81
Dec. 2	308,343 74	5,941 54	314,285 28	103,726 76	210,558 52	90,558 52
Dec. 31	283,977 81	11,475 74	295,453 55	100,415 38	195,038 17	76,038 17
				1,215,272 99	2,034,425 34	474,425 34
By stores and sundry adjustments				24,041 43	24,041 43	24,041 43
	3,169,813 84	79,884 49	3,249,698 33	1,191,231 56	2,058,466 77	498,466 77

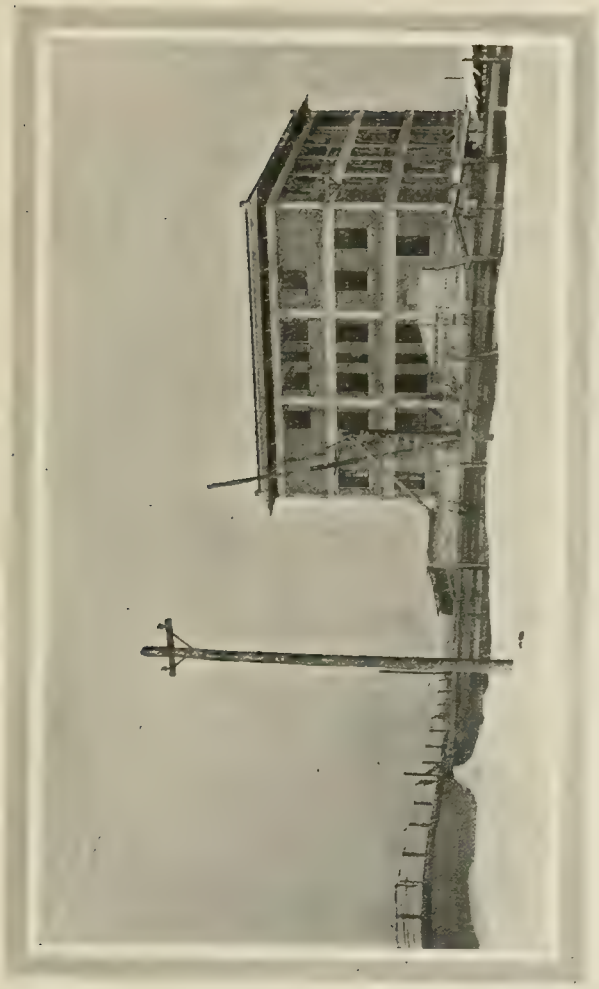
The Mine.

Operations have been carried on without interruption, except in March, when a shortage of power caused a temporary reduction in work. Total development underground for the year consisting of shafts, drifts, crosscuts, raises and winzes amounted to 10,805 feet, and 8,378 feet of diamond drilling. The ore broken during 1915 was 321,052 tons.

The ore was hoisted from the different levels as follows:—

Level. Above.	Tons.
100 feet	31,952
200 "	118,211
300 "	127,285
425 "	37,437
550 "	10,453
675 "	3,251
800 "	4,612
950 "	260
1,100 "	1,109
——	334,570

Of this amount 85.5 per cent. came from stopes and 14.5 per cent. from development. The amount of waste removed during the year was 42,424 tons.



The Canadian Mining & Finance Co., Ltd. Administration Building.
16th February, 1916.

The following figures show a comparison of expenditures for mining in the years 1913, 1914 and 1915:—

Year.	Exploration.		Development and Deferred Develop.		Production.		Total.	
	Amount.	Per Ton.	Amount.	Per Ton.	Amount	Per Ton.	Amount.	Per Ton.
	$ c.	$	$ c.	$	$ c.	$	$ c.	$
1913	13,230 59	0.096	137,375 38	0.993	274,688 23	1.986	425,294 20	3.075
1914	11,607 89	0.056	207,993 12	0.998	344,548 69	1.646	564,149 70	2.70
1915	13,468 46	0.040	240,435 07	0.718	477,187 32	1.425	731,090 85	2.183

The following unit costs are given as a matter of interest:—

Diamond drilling, including power, diamonds, labor	**$1 60**	**per foot.**
Crosscutting, including power, explosives, labor	**6 40**	**" "**
Shaft sinking, including power, explosives, labor	**42 32**	**" "**
Drifting, including power, explosives, labor	**10 10**	**" "**
Raising, including power, explosives, labor	**16 17**	**" "**
Winzes, including power, explosives, labor	**39 20**	**" "**
Stoping, including power, explosives, labor	**0 70**	**" ton.**
Mucking and tramming, power and labor	**0 28**	**" "**

The 1,100-foot level has been reached and No. 1 vein has been found to persist to that depth.

The main shaft has been completed to the 800-ft. level and ore may now be hoisted direct from that level.

During the month of April an electric locomotive haulage system was started underground. The result has been a saving of seven cents per ton in tramming costs. This amounts to a total of $26,389.58 saved.

Back filling of stopes with waste rock was started during the year, which has added slightly to working costs.

The price of explosives has advanced steadily, and this advance has increased the cost of mining by fifteen cents per ton over what it would be with normal prices ruling.

Most of the work of the year has been confined to the upper levels of the mine. A comparatively small amount of work has been done upon the 675 and 800-foot levels, but no attempt has been made to push development upon these levels owing to the large amount of territory to be covered on the upper levels.

During the year several discoveries of great importance to the mine have been made. Among these may be noted an ore body on the 800-foot level reached by a crosscut east of No. 1 Vein having a width of over 20 feet and an average value of over $10.00 per ton.

The Mill.

During the year the mill treated a total of 441,236 tons of ore of which 334,750 tons came from Hollinger and 106,486 tons from the Acme Gold Mines Limited.

Detailed information regarding the Hollinger treatment is given below:

MILLING RECORD.

Total ore milled	441,236	
Less Acme ore milled	106,486	
Tons of Hollinger ore milled	334,750	
Average value per ton	$10 11	
Total values sent to mill	$3,384,666 84	
Average tons per day	917	
Per cent. of possible running time	93.8%	
Average tons per 24 hrs. of running time	978	
Stamp duty tons per 24 hrs. of running time	14.72	
Unrecovered values:—		
Concentrates stored for re-treatment	$81,763 00	
Lost in tails	133,090 00	
Total	214,853 00	
Values recovered	3,169,813 84	
Value per ton in tailings	0 40	
Cyanide consumed per ton ore	0.574	lbs.
Lime consumed per ton of ore	1.896	"
Zinc consumed per ton of ore	0.467	"
Acid consumed per ton of ore	0.0032	"
Lead acetate consumed per ton of ore	0.0021	"
Tons of solution precipitated per ton of ore	1.909	
Zinc added per ton of solution	0.244	
Average value of pregnant solution	$5.074	
Cost of treating Hollinger ore per ton	0.999	

During the year the concentrate treatment plant was altered so that now concentrates are treated as produced and the values contained in the concentrates stacked during the past two years are steadily being reclaimed.

Early in the year the capacity of the mill was raised to 1,600 tons per day and during the latter part of the year extensions were commenced which will increase the capacity to 2,000 tons per day.

One hundred stamps are in regular operation and now extra tube-mills and screening plant are being installed, to which ore leaving the crushers small enough to be tube-milled will be by-passed thus relieving the stamps.

The continuous decantation plant is being increased by the addition of two rows of 40-ft. tanks. Six Dorr agitators, 26 ft. in diameter by 18 ft. deep, have been installed to secure a longer period of treatment for the ore. The concentrating plant has been re-arranged to make room for the agitators, and a tube mill has been installed in circuit with two smaller agitators for treating concentrates.

It is expected that by means of these alterations the capacity of the mill will be raised to 1,900 tons per day, and that a slightly improved extraction will be obtained owing to the increased agitation provided.

The alterations will probably not be ready for use before the first part of April.

COMPARATIVE COSTS PER TON FOR THE YEARS 1913, 1914 and 1915.

	1913	1914	1915
Tons milled per day	379	584	917
Cost per ton of:—	$	$	$
Mining	3.09	2.10	1.89
Milling	1.63	1.22	1.00
General	1.38	1.10	.65
Depreciation	.88	.79	.44
Totals	$6.97	$5.21	$3.98

While increased efficiency is no doubt responsible for much of the reduction in cost, yet a very definite advantage is gained by the handling of larger tonnages.

Actual working costs have been reduced to $3.41 per ton and these would be still lower were it not for the enhanced value of supplies due to the war. The advanced price of explosives has already added ten cents per ton to the mining costs, and milling costs will be increased approximately seven cents per ton owing to the advanced price of zinc dust.

The underground system of electric locomotives has shown a reduction of seven cents per ton in tramming.

The stores department has handled approximately one million dollars worth of supplies during the year.

The average number of men employed during the year has been 735 on the following classes of work:—

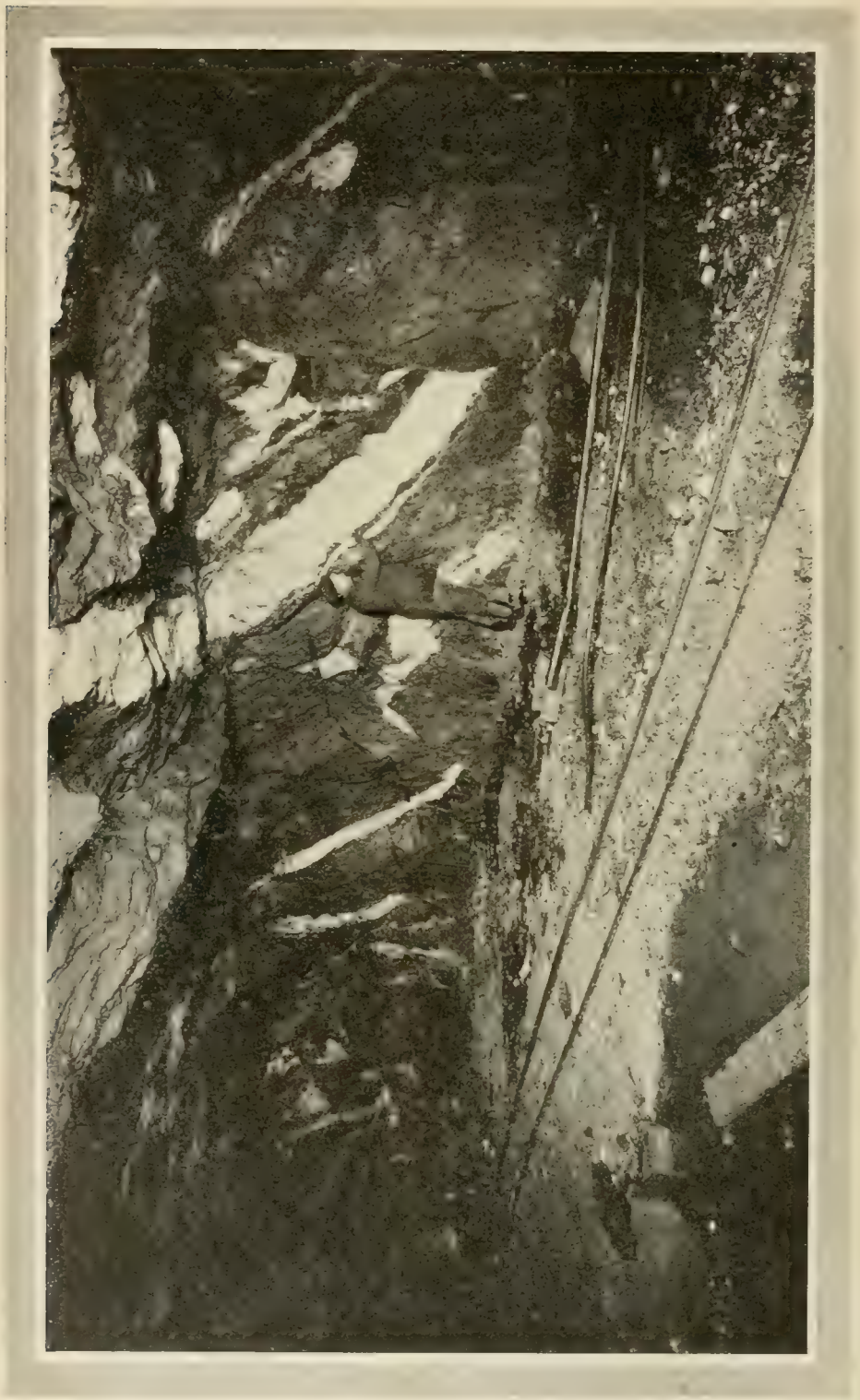
Miners—		Mechanics—			Millmen		98
Exploration	5	Operating	32		Refinery		5
Development	83	Maintenance	78		Engineering Staff	10	
Production	315	Construction	84		Clerical Staff	8	
	403		194		Miscellaneous	17	35
					Total		735

THE ACME GOLD MINES, LIMITED.

Production for the Calendar Year 1915.

Period Ending—	Tonnage Treated.	Gross Value.
		$ c.
January 28th		
February 25th		
March 25th	3,714	42,822 42
April 22nd	4,231	44,002 40
May 20th	10,291	98,381 96
June 17th	10,152	93,702 96
July 15th	10,652	98,424 48
August 12th	11,597	104,720 91
September 9th	11,559	104,377 77
October 7th	10,990	106,163 40
November 4th	10,495	108,518 30
December 2nd	11,214	123,241 86
December 31st	11,591	120,198 67
Total	106,486	1,044,555 13

The Dome Mines, Ltd. Open pit looking south, 250 feet wide.



The Dome Mines, Ltd. Sill floor of a shrinkage stope.

The Dome Mines, Ltd. Drawing level under shrinkage stope, showing chutes and 5-ton ore cars.

The Dome Mines, Ltd. Main haulage level, showing 5-ton cars.

THE DOME MINES COMPANY, LIMITED.

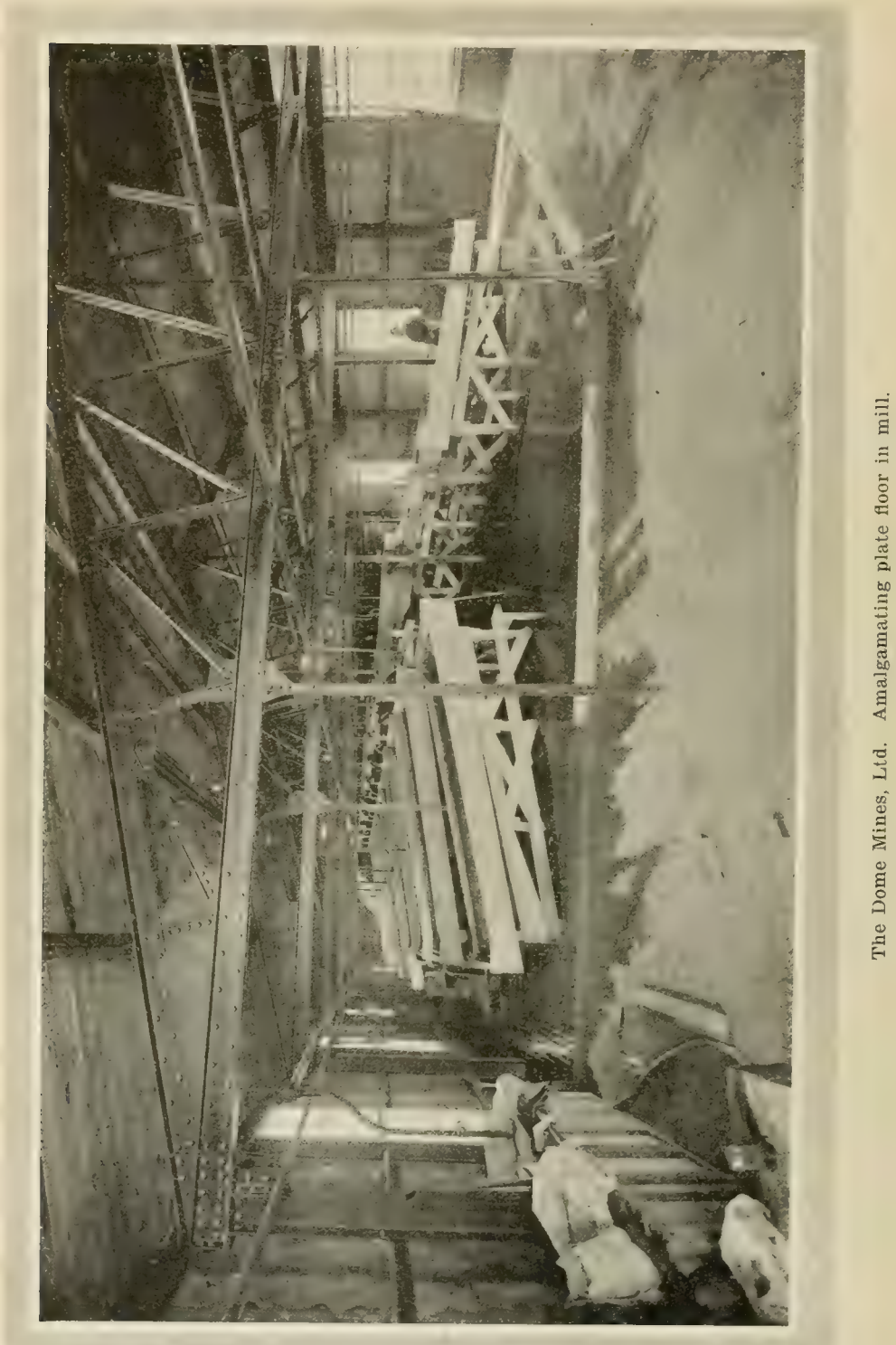
Production Record for Calendar Years 1914 and 1915.

	Ore Milled. Tons.	Ounces Gold Product.	Ounces Silver Product.	Value Gold Product.	Value Silver Product.	Total Value.	Recovery per ton.
1914				$ c.	$ c.	$ c.	
January	13,900	5,392.103	618.06	111,464 65	346 11	111,810 76	8.04
February ...	12,010	3,302.931	484.11	68,277 62	271 11	68,548 73	5.70
March	14,970	4,246.367	572.77	87,780 20	328 64	88,108 84	5.88
April	14,710	4,697.850	589.04	97,113 16	341 64	97,454 80	6.62
May.....	16,180	2,992.906	425.40	61,868 86	240 28	62,109 14	3.83
June	18,160	4,027.601	650.04	83,257 89	364 02	83,621 91	4.60
July	19,780	3,993.237	696.03	82,547 51	366 75	82,914 26	4.19
August	22,110	4,380.731	792.51	90,557 75	417 17	90,974 92	4.11
September..	21,940	4,781.808	848.93	98,848 71	441 45	99,290 16	4.52
October.....	22,500	4,608.783	941.49	95,272 01	464 50	95,736 51	4.25
November ..	22,040	4,585.121	950.53	94,782 84	456 26	95,239 10	4.32
December...	23,090	4,016.590	831.16	83,030 26	* 398 97	83,429 23	3.61
Totals..	221,390	51,026.028	8,400.07	1,054,801 46	4,426 90	1,059,238 36	4.78
1915							
January	23,220	3,975.957	729.570	82,190 31	350 19	82,540 50	3.55
February ...	21,600	4,061.863	706.280	83,966 16	339 00	84,305 16	3.90
March	23,220	4,713.879	873.250	97,444 47	436 62	97,881 09	4.21
April.....	23,630	4,567.746	879.610	94,423 73	439 80	94,863 53	4.01
May.....	26,000	5,360.761	889.500	110,816 79	444 75	111,261 54	4.28
June	27,200	5,823.976	870.160	120,392 25	428 94	120,821 19	4.44
July.....	28,300	6,345.575	900.487	131,174 66	432 24	131,606 90	4.65
August	28,600	6,473.406	1,037.230	133,817 19	487 49	134,304 68	4.69
September..	28,500	6,728.769	1,143.616	139,098 26	575 89	139,674 15	4.90
October	28,750	10,174.086	1,769.340	210,314 85	889 44	*211,204 29	.....
November ..	28,600	7,732.967	1,265.421	159,854 62	675 72	160,530 34	5.61
December...	30,120	7,766.957	1,334.315	160,557 23	735 63	161,292 86	5.35
Totals..	317,740	73,725.942	12,389.779	1,524,050 52	6,235 71	1,530,286 23	4.81

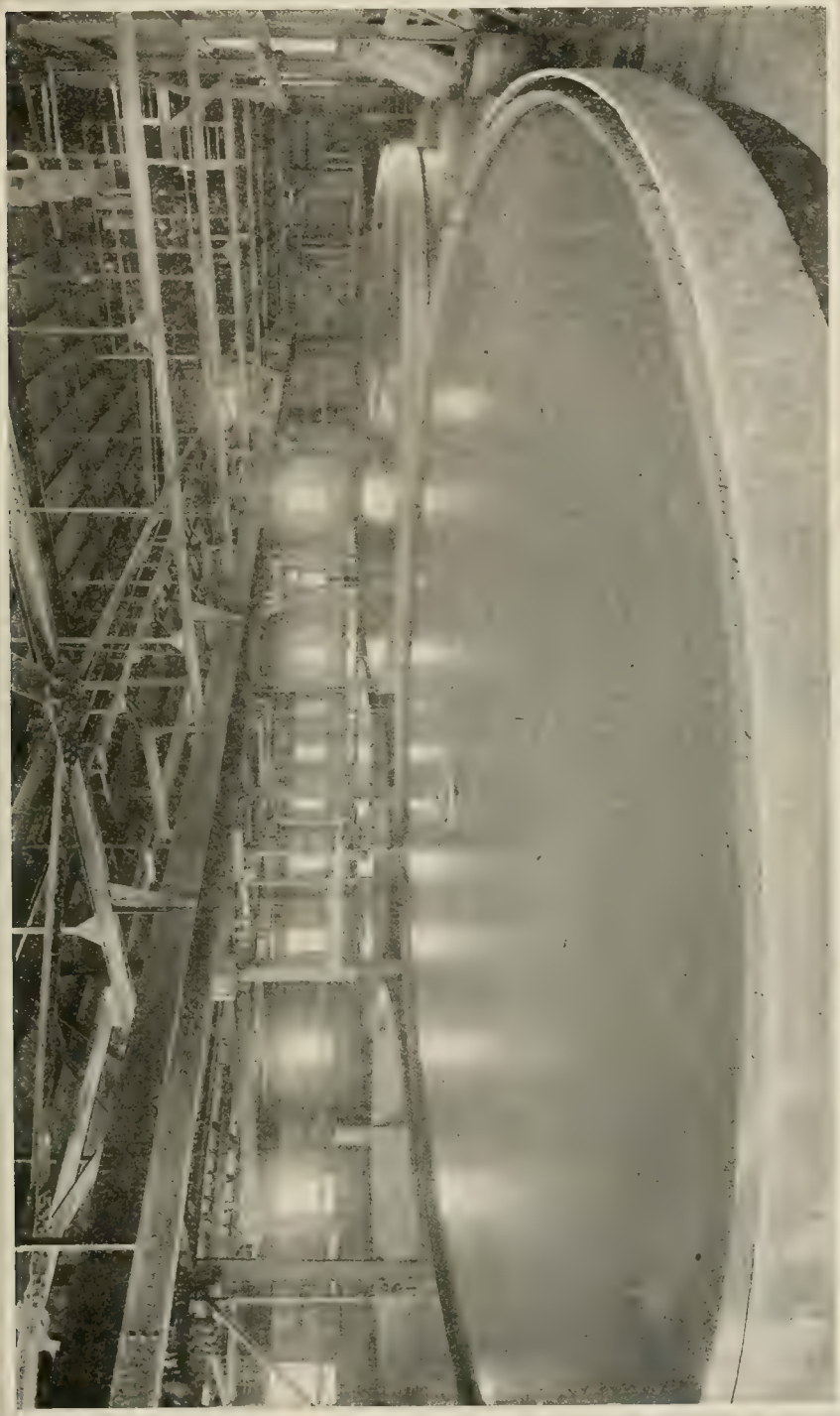
* This includes gold recovered from semi-annual clean-up.

A careful perusal of the above table shows a steady increase in the tonnage treated during the last two years. This increased tonnage is due to the bringing of the mill up to its maximum capacity and the partial completion of the extensions to the plant which will ultimately give it a capacity of 45,000 tons per month. During 1914 the increase in tonnage was made at the expense of the grade of the ore, which came mostly from the open pits. The increase in the value of the ore treated in 1915 is due to the higher value of ore coming from development work and the starting of stoping operations underground where the values are considerably in excess of the open pits.

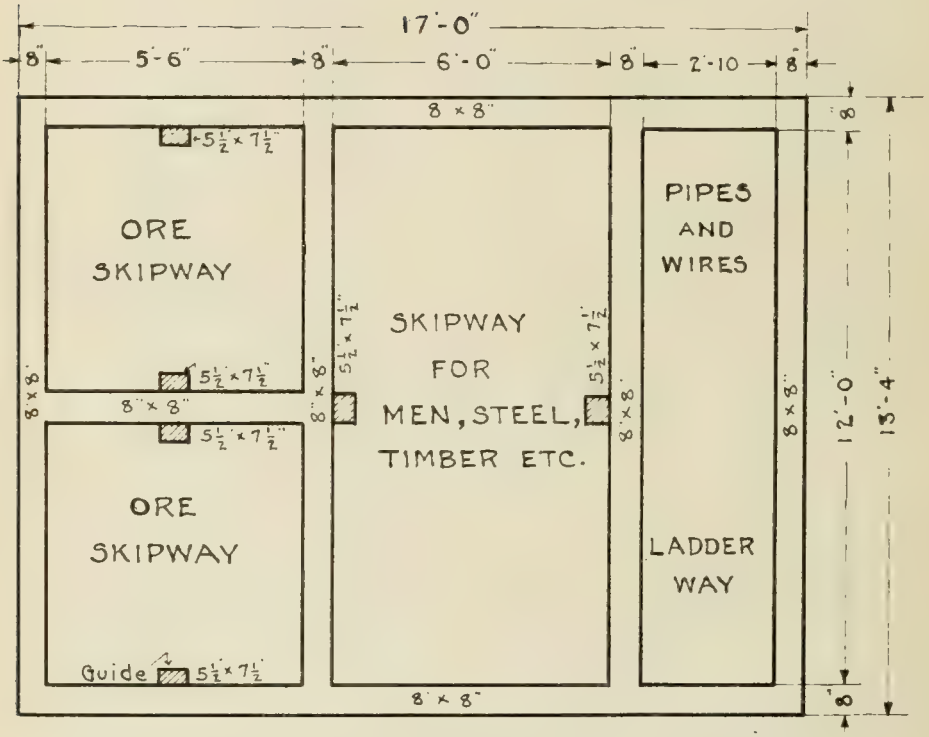
Provision is made for preliminary crushing underground by the installation of a Buchanan all-steel Jaw Crusher, 54 in. x 36 in. with a capacity of 250 tons per hour to 8 in., or 200 tons per hour to 6 in. This crusher is situated just below the fifth level so that all ore above the fifth level will be tributary to it. It is estimated that something over three million tons will ultimately pass through this installation. A large ore pass 10 ft. x 20 ft. in section has been constructed from the crusher station up to and above the third level, and the system is so laid out that trains of cars hauled by storage battery locomotives can be dumped into



The Dome Mines, Ltd. Amalgamating plate floor in mill.

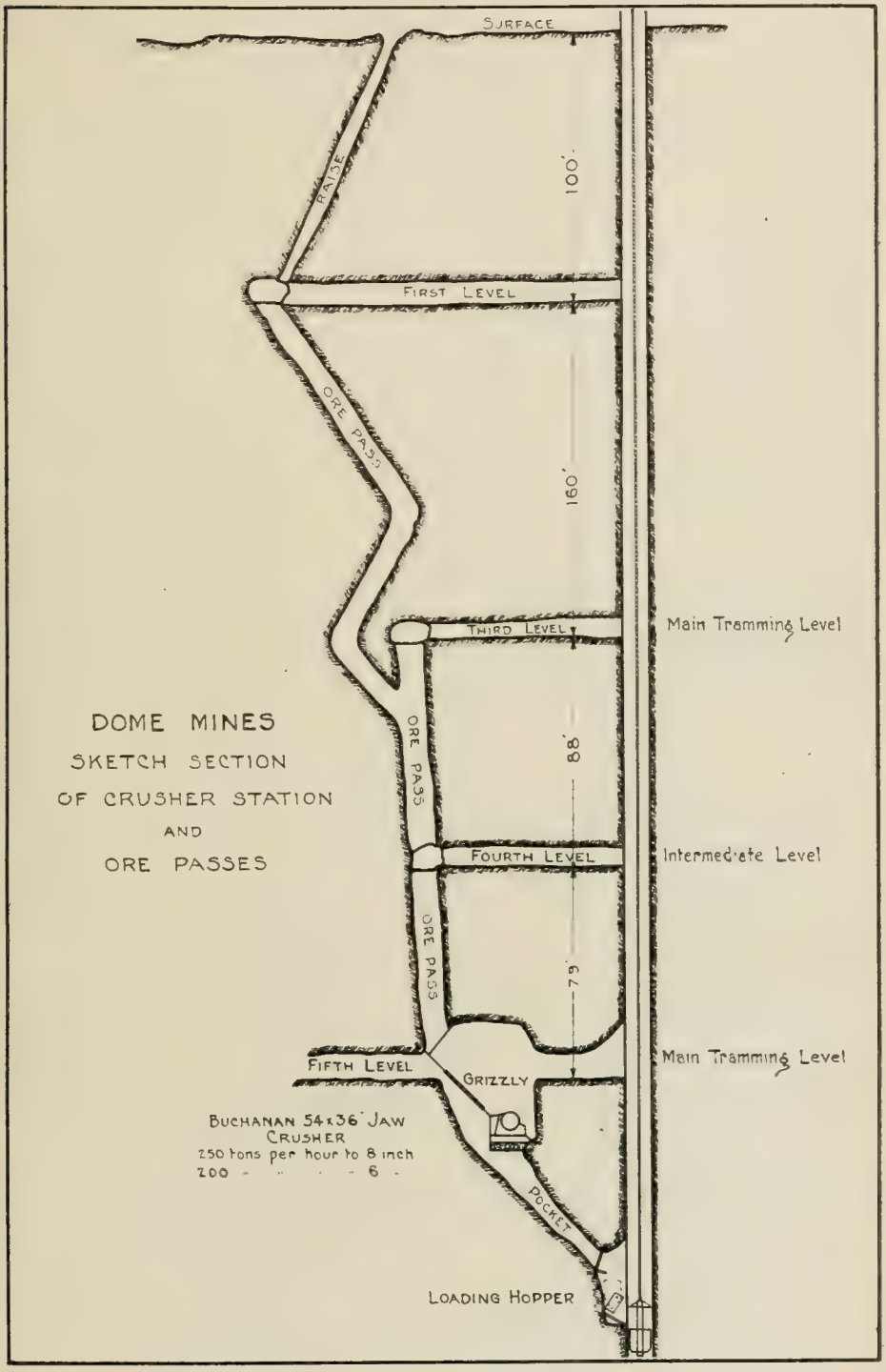


The Dome Mines, Ltd. Sand leaching section of mill.



DOME MINES

SKETCH PLAN OF NEW SHAFT


SURFACE
RAISE
100'
FIRST LEVEL
ORE PASS
160'
THIRD LEVEL
Main Tramming Level
DOME MINES
SKETCH SECTION
OF CRUSHER STATION
AND
ORE PASSES
ORE PASS
88'
FOURTH LEVEL
Intermediate Level
ORE PASS
79'
FIFTH LEVEL
GRIZZLY
Main Tramming Level
BUCHANAN 54x36" JAW
CRUSHER
250 tons per hour to 8 inch
200 " " " 6 "
POCKET
LOADING HOPPER

this ore pass from any of the levels above the fifth. The fifth level ore trains will dump on to a chute which leads directly into the crusher. Underneath the crusher is a pass which carries the ore to a loading station on the sixth level, whence it will be conveyed by automatic arrangement to the pocket at the new No. 3 shaft. This pocket will hold about 500 tons and will be equipped with automatic loading hoppers to fill the 5-ton skips. From the surface ore bin to the secondary crusher station the haulage will be a head-and-tail rope with a 20-ton car.

A new vertical shaft was started on 1st November and by the end of the year was down 313 feet. It will contain two compartments for hoisting ore, one larger compartment for men and supplies, and a fourth compartment to contain pipes, ladder-way, etc. (See sketch.)

The central compartment being 6 ft. x 12 ft., drills and drill-steel can be handled on the man-cage in it without upending, and it is large enough also to handle without inconvenience the electric locomotives and 5-ton cars to be used underground when required to be moved for repairs or for any other reason. Above this shaft will be erected a 125-foot steel headframe.

The new rock hoist to be installed will have a capacity of 100,000 tons per month. More air compressors are being added and the switchboard capacity is to be doubled.

The capacity of the mill has gradually been increased till at the end of the year it was about 1,000 tons per day. Work of further enlarging the capacity of the mill to treat 1,500 tons per day was at that time about seventy-five per cent. completed. The first considerable increase in tonnage will be in January, 1916.

To make this change the following additions are being made to the mill:

2—8′ x 30″ Hardinge Ball-Mills.
2—5′ x 22′ Tube-Mills.
2—90 Frame Merrill Presses.
3—10′ x 30′ Dorr Thickeners.
2—8′ x 45′ Pachuca Tanks.
2—12′ x 40′ Sand Leaching Tanks.

These additions, which will increase the monthly capacity of the mill by 17,000 tons, are expected to be completed by April 1st, 1916.

McIntyre-Porcupine Mines, Limited.

Record of Production for 1915.

Period.	Tons milled.	Value per ton.	Gross value.	Recovery %	Operating cost per ton.	Operating profit.
		$ c.	$		$ c.	$
1st Quarter	23,445	6 85	184,014	96.3	5 02	59,488
2nd "	25,410	7 87	200.030	96.0	4 44	79,031
3rd "	26,940	7 82	210,706	95.9	4 27	87,140
4th "	26,160	7 39	193,261	95.4	4 16	75,485
Totals and averages	101,955	7 73	788,011	95.9	4 45	301,144

In August this company acquired the McIntyre Extension, an adjoining property formerly known as the Pearl Lake Mine, and in October a controlling interest in the Jupiter was acquired. The McIntyre Extension shaft has been sunk from the 665-foot level to the 900-foot level and this is to be extended to 1,080 feet. It is the intention to drive from this shaft on the 600-foot level into the Jupiter and to connect the 1,000-foot level with McIntyre No. 5 shaft. This is to be the main working shaft for the consolidated properties. The development in the McIntyre property during the year has been the sinking of No. 4 shaft from the 400-foot to the 600-foot levels, and No. 5 shaft from the 400-foot to the 700-foot levels, and the opening up of the new levels thus reached. The average daily tonnage of the mill is now 300 tons. A new unit is under construction and nearing completion, which will add a further 150 tons to the daily capacity.

Porcupine Crown Mines, Limited.

Development.

Total development was 4,476 feet for 1915.

—	Prior to 1915.	1915.	Total to date.
Drifting	3,778	1,795	5,570
Crosscutting	4,997	2,146	7,143
Raises and Winzes	1,780	535	2,315
Totals	10,555	4,476	15,028

The main shaft was raised from the 500-foot level to the 400-foot level, making a total depth of 500 feet.

Additions to ore reserves were made on the 200, 300, 400, 500, 600 and 700-foot levels.

Considerable diamond drilling was done which successfully picked up the vein after faulting.

The 700-foot level is reached by a winze on the vein from 500-foot level. This winze will be used as a temporary hoisting shaft till enough ore has been blocked out on the sixth and seventh levels to warrant a further sinking of the main shaft.

Production.

Net value bullion marketed after deducting mint charges was $599,731.77.

Actual gold production of mill was $599,501.57.

Thirty-four thousand six hundred and eighty tons of ore were broken in the stopes and 5,848 tons of ore were broken in development.

Twelve thousand four hundred and ninety-six tons of waste were broken and hoisted to the waste dump.

Milling.

Crushed	41,326 tons
Average value heads	$14 51
Average value tails	0 34
Average value recovered	14 17
Extraction	97.67%

Besides the ore treated, 5,093 tons of tailing which had passed through the original amalgamation mill without cyaniding, were treated during the summer in the cyanide plant. While re-treating this tailing the daily capacity of the mill was raised from 125 to 185 tons. This was done without interfering with the regular working of the mill as the cyanide equipment has sufficient capacity for the extra tonnage. There is still over 7,000 tons of this tailing to be treated. On this tailing, upon which an original extraction of 85 per cent. had been made, a further extraction of 85.77 per cent. of the remaining 15 per cent. was made.

No changes of any kind were made in the milling practice.

It is notable that although the grade of the ore was somewhat lower than that of the previous year, the extraction was better.

Costs of Operation.

Mining	$1 97	per ton	milled.
Development	0 72	"	"
Prospecting	0 69	"	"
Diamond drilling	0 17	"	"
Milling	1 46	"	"
General	1 32	"	"
Depreciation, insurance, taxes, compensation, head office, etc.	1 24	"	"
Total	$7 55		

Total revenue		$601,742 01
Operating expenses	$262,501 31	
Head office account	51,337 27	
Net profits		$287,903 43
Dividends		240,000 00
		$37,903 43

Ore Reserves.

During the year approximately 60,000 tons of ore were developed of such grade that there has been no depletion of ore reserves by the drawage. The grade developed is lower than that previously blocked out, the gold in the extension of the vein south of the "Main Fault" being more disseminated through the wall rock.

The lowest level of the mine, the 700, was reached in 1915 and only a short drift has been run on the vein, but the prospect is encouraging.

SUMMARY FOR 1915.

Period.	Average daily tons.	Tons in month.	Heads value. Total.	Heads value. Per ton.	Tails value. Total.	Tails value. Per ton.	Produced. Total.	Produced. Per ton.	Ext.
			$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	
January ..	121.6	3,769	53,364 97	14 15	1,076 15	0 28	52,288 82	13 87	98.02
February .	125.3	3,510	67,087 77	19 11	1,061 30	0 30	66,026 47	18 81	98.47
March	84.2	2,612	51,489 33	19 71	708 56	0 27	50,780 77	19 44	98.63
April.....	101.7	3,052	57,561 91	18 86	854 52	0 29	56,707 39	18 58	98.51
May.....	131.4	4,072	64,741 21	15 89	1,027 86	0 25	63,713 35	15 61	98.23
June.....	.....	P.T.198	P.T.623 70	.....	P.T.69 62	....	P.T.554 08	.....	.....
	124.4	3,732	50,320 13	13 49	1,093 87	0 30	49,226 26	13 19	97.77
July.....	.....	P.T.1,154	P.T.3,635 51	.....	P.T.426 92	....	P.T.3,208 59	.....	.....
	97.8	3,034	36,943 32	12 17	1,113 01	0 37	35,830 31	11 80	96 95
August...	91,3	P.T.2,538	P.T.7,995 85	.....	P.T.1,222 45	....	P.T.6,773 40	.....	.....
	.....	2,832	36,529 80	12 89	1,384 06	0 48	35,143 74	12 41	96.27
September	106.3	P.T.1,203	P.T.3,789 45	.....	P.T. 564 57	....	P.T.3,224 88	.....	.....
	.....	3,189	33,202 34	10 41	1,372 77	0 43	31,829 97	9 98	95.86
October...	118.7	3,680	69,745 69	18 95	1,362 69	0 37	68,383 00	18 58	98.00
November.	126.8	3,803	56,683 36	14 90	1,401 70	0 37	55,281 66	14 53	97.51
December.	130.3	4,041	21,967 32	5 44	1,440 44	0 35	20,526 88	5 09	93.56
Totals..	113.2	41,326	599,637 15	14 51	13,896 53	0 34	585,740 62	14 17	97.67
	.....	P.T. 5,093	16,044 51	3 15	2,283 56	0 45	13,760 95	2 70	85.77

P.T. (Pond Tailing from Amalgamation Mill—Cyanided.)

PORCUPINE VIPOND MINES, LIMITED.

Development.

During the year the 200-foot level was extended to the west limit of the North Vipond Lot, demonstrating the continuation of the ore-bearing zone to that point.

A two-compartment vertical winze was sunk from the 300-foot level, 220 feet and stations were cut at the 400 and 500 points. A cage has been installed in the winze and exploration work is being carried on on the 400-foot and 500-foot levels. The drifts will be carried to a point under the main working shaft and connection made with it.

A summary of the total development work to date follows:—

	To 1915	1915	Total.
Sinking and raising	795.0	381.5	1,176.5
Drifting	2,902.4	1,198.9	4,101.3
Crosscutting	1,757.9	218,6	1,975.6
Total	5,454.4	1,799.0	7,253.4
Diamond drilling		524.0	524.0

Production.

			Per ton.
Ore treated	35,899 tons.		
Gold bullion produced	11,921.15 fine oz.	$246,410 32	
Silver bullion produced	1,455.39 fine oz.	713 73	
Total value recovered		247,124 05	$6 89
Total value tailings		22,543 37	0 62
Gross value ore treated		269,667 42	7 51
Percentage extraction			91.7%

Tonnage milled was drawn from the following:

Stopes	31,598 tons.
Development	4,077 tons.
Dump	224 tons.
Total	35,899 tons.

Ore Reserves.

The estimated ore reserves amount to 90,000 tons of a gross value of $587,280.00, of which 17,130 tons valued at $93,000.00 is broken and stored in stopes.

Schumacher Gold Mines, Limited.

Underground, the shaft was sunk from 326 feet to 624 feet and stations cut at 400 feet, 500 feet and 600 feet. 1,086 feet of crosscutting has been done on the 300-foot, 400-foot, and 600-foot levels, 436 feet of driving has been done, principally on the 300-foot and 400-foot levels, and 293 feet of raising on the 100-foot and 200-foot levels.

Surface.

A 150-ton counter-current decantation cyanide plant was built and started operations on September 1st. From that time to the end of the year it treated 9,240 tons.

December costs were as follows:

Milling costs	$0.997
Mining costs	3.533
Total costs	$4.53

This includes all items except depreciation.

An assay office and a refinery were built and equipped and crusher and conveyor building erected. An addition was also made to the power house to contain a new 100 h.p. return tubular boiler and a 744 cu. ft. cross compound compressor. A dry house was also built and a new office building is nearly completed.

Dome Lake Mining and Milling Company.

Underground work during the year has been encouraging. Development work was:—

Drifting	796.5 feet.
Crosscutting	135.0 feet.
Sinking	68.9 feet.
Raising	157.0 feet.

The little mill ran more or less continuously throughout the year, a considerable part of the ore treated coming from development. The ore was crushed

Headframe—Tough-Oakes Gold Mines, Ltd.—Kirkland Lake, Ont.

Tough-Oakes Mine, Kirkland Lake, Ont. Stope 9 ft. wide, 200 ft. level, west drift. No. 2 vein.

in a Blake crusher and fed to stamps, then to a tube-mill where most of the amalgamation was done. The discharge went over first set of copper plates, then to Dorr Classifier, the coarse going to tube-mill and slimes over second copper plate to concentrating tables. These concentrates have been shipped to the smelter, but the company has now decided to treat all ore on the property and has placed an order for a small cyanide plant which is to be installed early in 1916.

The milling and shipping record for 1915 is as follows:

Tons of ore milled	11,727.6
Gold content of same gross	106,989.20 oz.
Bullion shipped	3,966.86 oz.
Gold content of same	3,407 oz.
Value of fine gold	$70,439.91
Silver content of bullion	516.13 oz.
Value of silver	$251.15
Concentrates produced, 1915	221.64 tons.
Estimated gold content of same	$15,810.56
Concentrates shipped	193.34 tons.
Gold content of same	770.65 oz.
Silver content of same	337.94 oz.
Value of silver in concentrates shipped	$167.42
Average value of bullion shipped	$17.82

North Thompson (Associated) Gold Mine, Limited.

Development during 1915 at the North Thompson (Associated) Gold Mine has been quite encouraging. A three-compartment shaft has been sunk 300 feet and three levels, 100 feet apart, opened up with satisfactory results at each level, the richest ore being found at the 300-foot level. The mine footage completed is 3,550. The company intends to start the erection of a mill during 1916.

Sesekinika

Very little development outside of assessment work was done in this district during the year. The surface work on the Smith-Labine claim showed up a number of new and promising veins, and late in the year an option on this property was taken up by the Kerr Lake Company, and active development is now planned.

Swastika

The mine and equipment of the *Swastika Mining Company* was bought at a liquidator's sale by F. L. Culver *et al.* The shaft has been de-watered for the purpose of making an underground examination. An examination of the surface will be made in the spring after the snow is gone.

DIVIDENDS PAID BY PORCUPINE AND KIRKLAND LAKE GOLD MINES.

Mining Company.	Percentage paid during 1915.	Amt. of Dividends and Bonuses paid during 1915.	Total percentage paid to Dec. 31st, 1915.	Total amount of Dividends and Bonuses paid to Dec. 31st, 1915.
Hollinger	52	$1,560,000 00	139	$4,170,000 00
Dome	10	400,000 00	10	400,000 00
Porcupine Crown	12	240,000 00	21	420,000 00
Rea	6	12,000 00	6	12,000 00
Tough-Oakes	2.5	66,437 50	2.5	66,437 50
	——	2,278,437 50	——	5,068,437 50

Tough-Oakes Mill, Kirkland Lake, Ont.

KIRKLAND LAKE.

Tough-Oakes Gold Mines, Limited.

During the year all mining development was carried on underground. At the close of 1915 the shaft on No. 2 vein was down 300 feet, and the fourth level was opened up by a winze. On the 200-foot level a crosscut was driven north for 800 feet, which intersected Veins 3, 6, 7 and 8. On No. 3 vein, 250 feet of drifting has been done and a winze sunk 100 feet west of the crosscut to the 300-foot level. From the 116-foot level on No. 6 vein, 250 feet east of "B" shaft, a winze was put down 70 feet with very good results. The development record for the year was:

Shafts and winzes	224 feet
Drifting	1,608 feet
Crosscutting	947 feet
Raises	428 feet

Unusually low water conditions at the power plant at Charlton necessitated the curtailment of much work. The motor compressor was shut down about four and a half months. In November an auxiliary air compressor with a capacity of 1,265 cubic feet of air per minute, at 100 lbs. pressure, was installed. This compressor is suitable for steam or electric drive.

About half the underground force can be run with the auxiliary steam plant.

The 5-stamp mill to which was added an 8-foot Hardinge pebble mill was in operation from January until the middle of March and produced the following:

Tons milled.	Assay value per ton.	Gross value by assay.	Bullion produced.	Assay value tails.	Gross value tails.	% Extraction.
1,350	$27 78	$37,408 55	$14,802 13	$14 68	$19,768 09	42.8

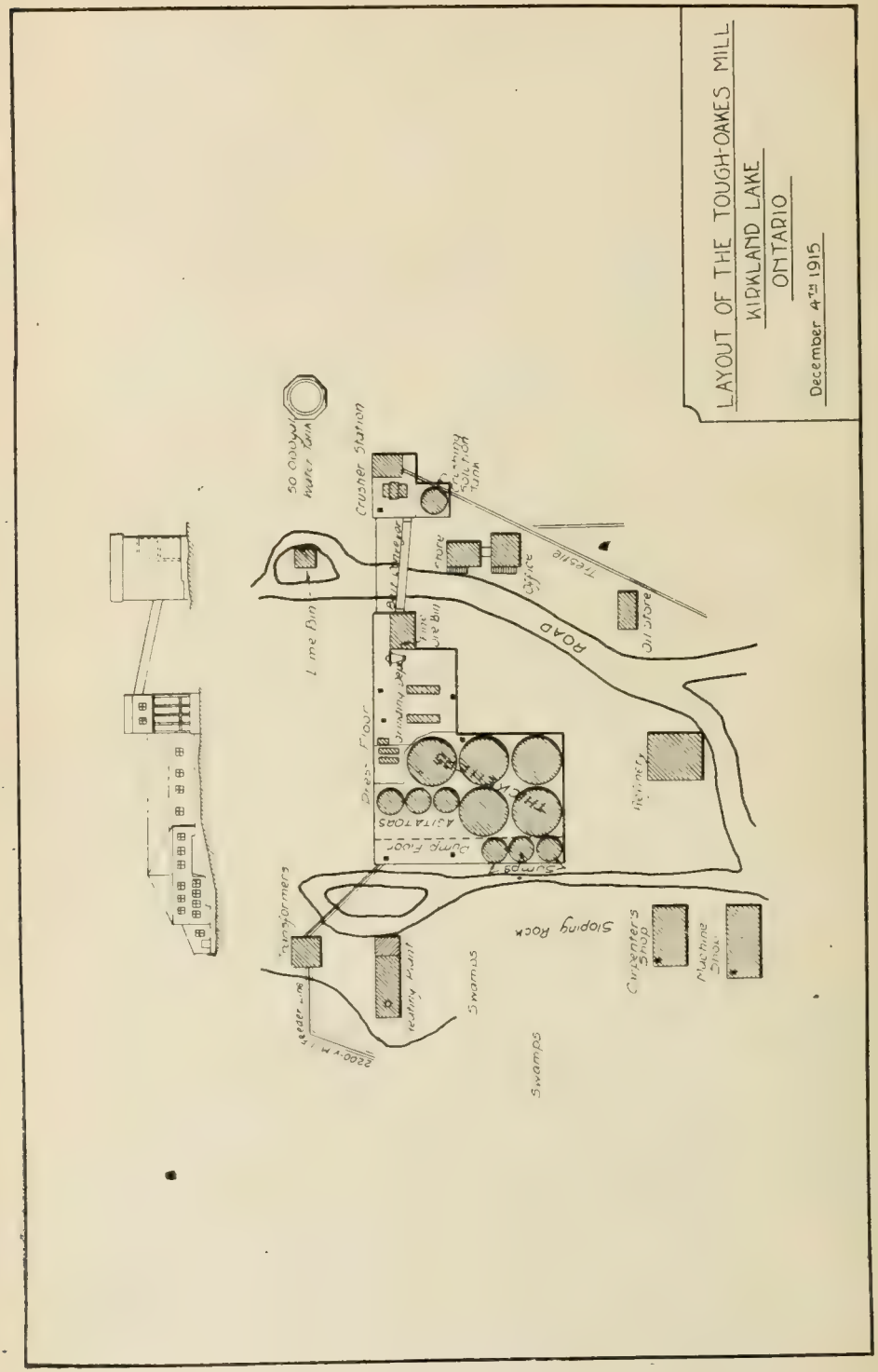
Crushing in new 100-ton cyanide mill started March 15th, 1915, slightly over three years from the date of discovery of gold on the property and twenty-nine months from the start of mining operations.

The mill is located 1,000 feet north of main shaft and the ore is delivered along an inclined trestle by a self-dumping skip.

The crusher station occupies a separate building connected with the cyanide plant by an overhead conveyor.

*In the crusher station run-of-mine ore is reduced to 1¼-inch ring by two jaw crushers, with intermediate elevating and screening. The crushed ore is delivered by belt conveyor to the fines-storage bin at the end of the fine-grinding department. From it push feeders deliver to a short conveyor feeding the ball mill. The ball mill product flows over a cocoa matting table into a duplex Dorr Classifier, which feeds the No. 1 tube-mill, (5 ft. x 20 ft.) and crushes in tandem with the No. 2 tube-mill (5 ft. x 20 ft.). The second duplex Dorr Classifier operates in closed circuit with the No. 2 tube-mill. The overflow of each classifier runs by gravity into a 30 x 10-ft. Dorr thickener. The overflow of this machine,

*Extract from E. & M. Jrnl., November 27th, 1915, page 870.


LAYOUT OF THE TOUGH-OAKES MILL
KIRKLAND LAKE
ONTARIO
December 4th 1915
Crusher Station
Crushing Plant
Tresse
Office
Store
Oil Store
ROAD
Power House
Grinding Room
Ore Bin
Dump Floor
ASITATOAS
THICKENERS
Dump Floor
Swamp
Engineers
Sloping Rock
Carpenters Shop
Machine Shop
Swamps
Swamps
Transformers
Feeder Line
2200 V.M.T.
Pumping Plant
1 ore Bin
50 Gallon Water Tank

constituting the pregnant solution, gravitates to a box containing canvas leaves for clarifying. From this a vacuum pump delivers the clear solution to a sump, from which it is drawn for precipitation. The zinc-dust system is used.

Thickened pulp from the bottom of the 30 x 10-ft. collector thickener is transferred by a diaphragm pump to three 16 x 12-ft. agitators operating continuously in series. The pulp from the third agitator gravitates to the first of four 28 x 10-ft. Dorr thickeners, operating on the continuous counter-current decantation principle. Each tank is 24 inches higher than the preceding one. The overflow runs by gravity, while the thickened-pulp transfers are effected by diaphragm pumps. From the final tank the thickened pulp is discharged by a diaphragm pump into a launder whence it runs through a mechanical sampling device and then to waste.

The total cost of the entire mill construction was $121,820.22 of which direct labor cost was $31,282.01 or 39 per cent.

Refining is done entirely in a tilting furnace without preliminary acid treatment. The gold and silver bullion produced averages about $13.00 per ounce.

The production for 1915 was:

Tonnage treated.	Gold, Fine, Oz.	Value.	Silver, Fine, Oz.	Value.	Total Value.	Value recovered, per ton.
		$ c.		$ c.	$ c.	$ c.
26,196	26,658.23	551,069 07	8.922	4,470 07	555,539 14	21 20

Teck-Hughes Gold Mines, Ltd.

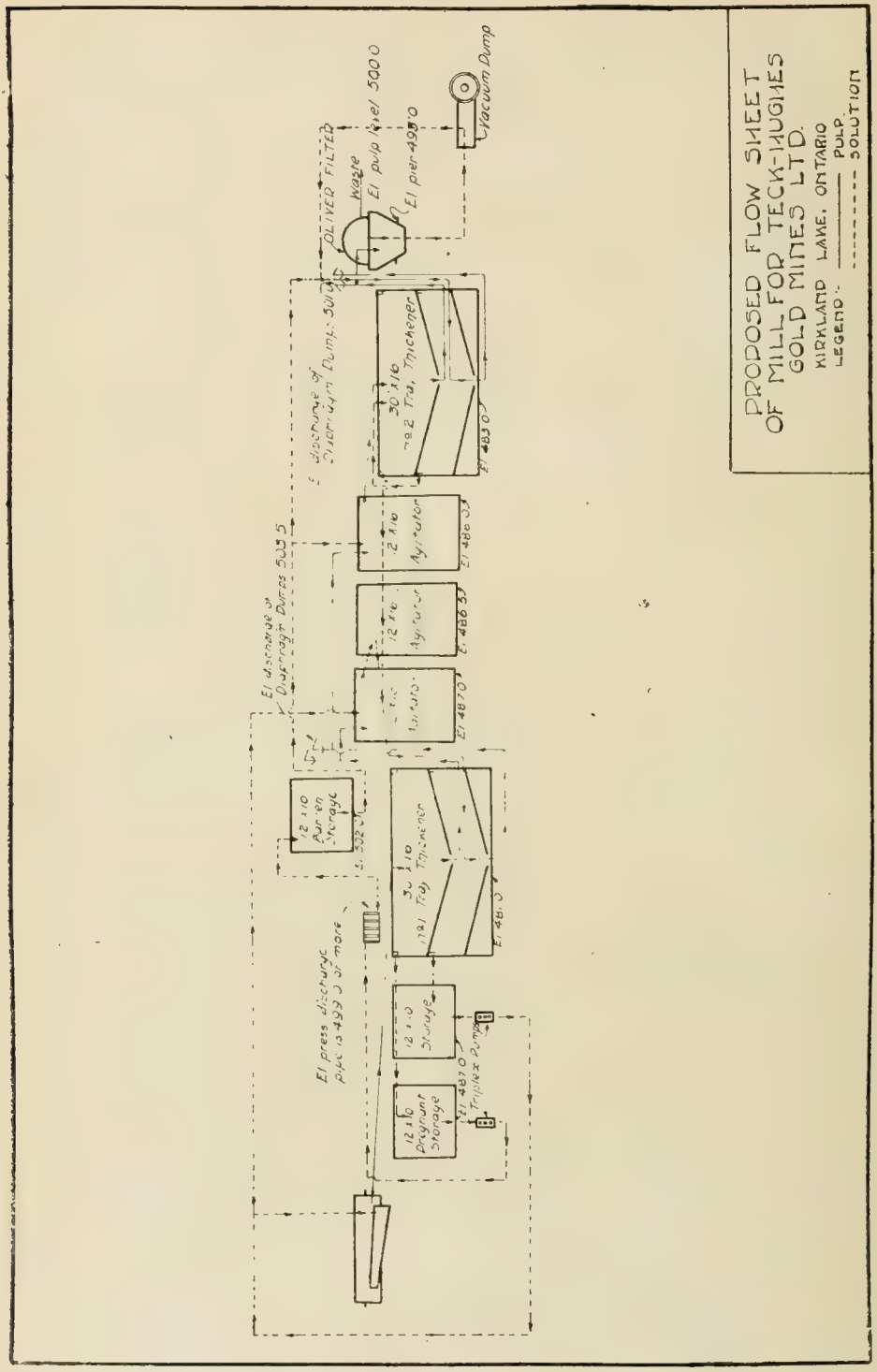
The stock control of Teck-Hughes Gold Mines, Limited, Kirkland Lake, Ont., was acquired in the fall of 1915 by the interests operating the Buffalo Mines, Ltd., Cobalt. Under the direction of Thos. R. Jones, General Supt., and L. W. Ledyard, Supt., work was immediately started on a cyanide plant of fifty tons daily capacity.

The mill represents a slight deviation from the general practice of slime treatment in Ontario. Certain changes in the general practice were considered advantageous owing to the richness of the ore to be treated and the difficulty with which Kirkland Lake ores are cyanided.

The primary crushing is to be done in a 16 in. x 10 in. crusher of the Blake type. The ore is then conveyed to a storage bin from which it is fed to a 5 ft. x 5 ft. ball-mill. The discharge from the ball-mill goes to a Dorr classifier and 5 ft. x 20 ft. tube-mill in closed circuit. The overflow from the classifiers is conducted through the slime plant completing the treatment.

Continuous agitation in Dorr tanks is used and the solution is changed on the pulp when the agitation period is two-thirds over. By this removal of the solution high in gold and by the addition of an active barren solution, an additional recovery of values is anticipated.

The dissolved values are removed by counter-current decantation in Dorr tray thickeners, followed by a short wash in an Oliver revolving filter. By the use of trays a given washing effect is secured by the use of one-half the number of tanks required for the ordinary thickeners installation. The filter is expected to materially reduce the mechanical loss of cyanide as well as to effect an additional recovery of the dissolved gold over what would be obtained by thickeners


PROPOSED FLOW SHEET
OF MILL FOR TECK-HUGHES
GOLD MINES LTD.
KIRKLAND LAKE, ONTARIO
LEGEND:- PULP
SOLUTION
Vacuum Pump
El pump (wet) 5000
El pump 4950
Waste
DILUTED FILTRATE
30'x10' Thk. Thickener
12'x10' Agitator
12'x10' Storage
12'x10' Pregnant Storage
Triplex Pump
El discharge of Slurry Agitator Pumps 5035
El discharge of Slurry Agitator Pumps 5035
El press discharge pipe 4950 to mine

alone. This feature of the plant is especially advisable due to the high gold content of the solutions and the relatively high strength of cyanide necessary.

The plant is now (April, 1916) practically completed and will be ready to start as soon as electric power reaches the property, which will be early in the summer.

The Lake Shore Mines, Limited.

The Lake Shore Mine, situated on the south shore of Kirkland Lake, had at the end of 1915 the following development.

A vertical shaft was continued from a depth of 120 feet to 315 feet during the year and three levels opened up at 100, 200 and 300 feet.

100-*foot level.* Of the 368 feet of drifting, over 200 passed through ore. One hundred and twenty feet of this ore shoot averaged $20.00 per ton over a width of four feet, the remainder is lower grade but will give small profits on milling.

200-*foot level.* Work consists of 370 feet of crosscutting and drifting, but owing to faulting little ore was developed, but its consistent values and continuity were proved by diamond drilling.

300-*foot level.* The ore shoot here shows greater width but lower values. Of the 165 feet of drifting, 100 feet is in ore of a grade that will give small working profit. Diamond drilling also under Kirkland Lake located several promising veins.

Goodfish

A number of promising discoveries have been made on claims in the vicinity of Goodfish Lake, which is situated near the north-east corner of the Township of Teck. An option on some claims known as the *Gibson Claims* was taken up and a company formed under the name of "*LaBelle Kirkland Mines, Limited.*" The holdings of this company consist of seven patented claims in Teck and Lebel. Development was prosecuted as far as feasible by hand and then a small plant consisting of the following was installed:

2 Boilers, Robb Mumford, 60 h.p. each.
1 Compressor, Ingersoll Rand, 460 cu. ft.
1 Hoist, Ingersoll Rand, 8 x 12.

An inclined shaft was sunk 140 feet on a vein in a contact between quartz porphyry and basalt. On the 100-foot level 70 feet of drifting and crosscutting has been done. The ore is a gold-bearing quartz with finely disseminated molybdenite in streaks, some of which have a maximum width of 1½ feet. The streaks occur in a zone 20 feet wide.

The *Costello Claim* situated in the south-west corner of Morrissette has a shaft down 50 feet.

Diamond drilling is proceeding on the *McGuire* property.

Munro

After many disappointments a producing property has been found in Munro Township, which is known as the *Dobie-Leyson Claim.* The company is now incorporated under the name of "*The Croesus Gold Mines Limited.*" A white quartz vein lying at an angle of 27° has been developed by a shaft sunk 250 feet on the slope. Some of the ore is very spectacular. The vein left the shaft a little above the 150-foot level, but was picked up again in crosscuts at the 150-

foot and 200-foot levels, where it shows rich spots similar to the original ore in the shaft. The vein averages 18 inches to 2 feet in width. Two tons of ore were shipped which produced $83,500 in gold and it is estimated that there remains in the dump and rejects an additional $40,000. This was produced in the first 110 feet of shaft sinking. The property is being developed with a small steam plant and is also being diamond drilled. It is situated about eleven miles east of the Town of Matheson.

Boston Creek

To the east of mileage 153½ on the T. & N. O. Railway development was started on several gold prospects during the summer.

The R. A. P. Syndicate commenced operations during August on a property about three-quarters of a mile east of the railway in Boston Township. A shaft was put down 100 feet by hand and then operations were suspended while a small plant was installed consisting of:

1—60 H.P. Locomotive Boiler.
1—3-drill Compressor.
1—6" x 8" Jenckes Hoist.

A pumping plant consisting of a 40 h.p. boiler and a 10 in. x 12 in. Fairbanks Duplex Pump was also installed.

The Dominion Reduction Company did some prospecting work on the Giovanazzo Claims north of the R. A. P. Syndicate, but operations were suspended in December. Several other claims further east show free gold, the most promising being the McDonough in the Sixth Concession Pacaud, about three miles east from Mindoka station. This is now known as the *Miller Independence Mines*. A small plant, consisting of a boiler, compressor, hoist, and a one-stamp Nissen Mill have been installed. Shaft sinking has been started on a very persistent quartz vein averaging about twelve inches in thickness and carrying good gold values in places. The vein was very flat lying at an angle of about twenty degrees, but it was found to straighten up as a little depth was attained.

Kowkash

On August 21st, 1915, E. W. King Dodds made a spectacular gold discovery while walking over a rocky hill below Howard Falls on Kowkash River. The discovery is nine miles north westerly from Kowkash station on the National Transcontinental Railway, 297 miles west of Cochrane. The news of the find caused a rush of about 400 prospectors to the neighborhood and from 75 to 100 claims were staked within three weeks. Development will proceed on the *Dodds Claim* during the winter, but throughout the rest of the district very little development will be started before next spring.

SILVER

The Market.

The metal silver has stood alone as the only metal whose price has been adversely affected by war conditions. During 1915 sales were mostly confined to United States, Canada and Mexico. Unsettled internal conditions affected the delivery of silver from Mexico during the early months of the year and this offset the diminishing demand for silver, so that the price showed only small variations.

Eastern demands were fairly large at the commencement of the year, but these gradually fell off and from spring till midsummer prices gradually sagged.

The lowest price of the year was reached in London on July 29th, 22-5/16 pence, and in New York on September 1st, 46¼ cents.

Purchases by the French and United States governments for minting in September and by the British Government in October tended to steady the price and by the middle of November it was found that supplies on hand in London were shorter than had been estimated. This, in conjunction with an awakened interest in the east, caused a rapid rise in price, rising from 51½ cents November 20th to 56½ November 27th.

The year closed with much of this gain still retained in spite of heavy selling from China. Larger quantities than usual were acquired by the different governments during the year for coinage purposes, the British Government alone buying nearly 28,000,000 ounces, but this was necessitated by the restricted circulation of gold coinage.

The monthly average price of silver in New York and London is shown in the following table:

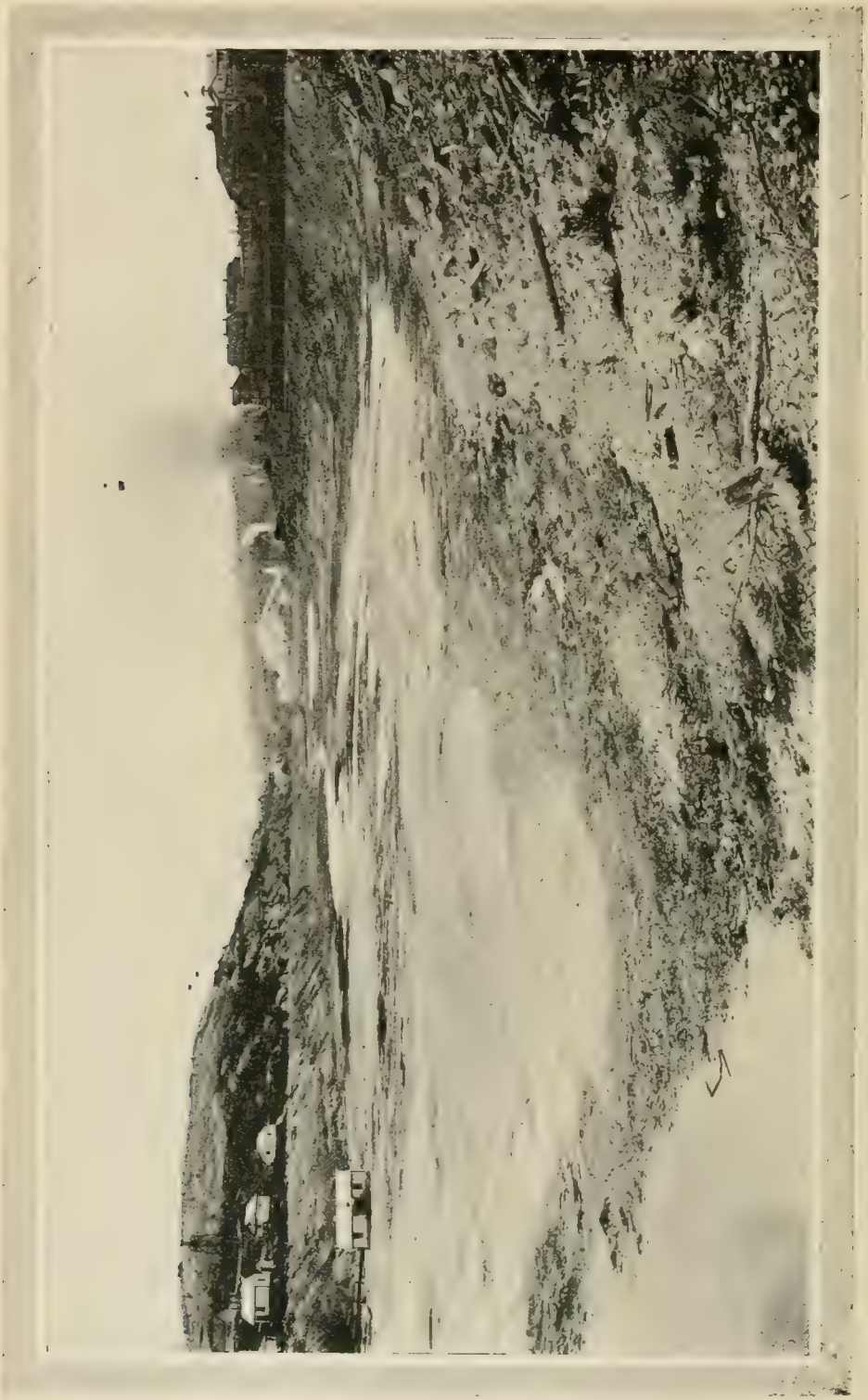
Month.	New York.			London.		
	1913	1914	1915	1913	1914	1915
January	62.938	57.572	48.855	28.983	26.553	22.731
February	61.642	57.506	48.477	28.357	26.573	22.753
March	57.870	58.067	50.241	26.669	26.788	23.708
April	59.390	58.519	50.250	27.416	26.958	23.709
May	60.361	58.175	49.915	27.825	26.704	23.570
June	58.990	56.471	49.034	27.199	25.948	23.267
July	58.721	54.678	47.519	27.074	25.219	22.597
August	59.293	54.344	47.163	27.335	25.970	22.780
September	60.640	53.290	48.680	27.986	24.260	23.591
October	60.793	50.654	49.385	28.083	23.199	23.925
November	58.995	49.082	51.714	27.263	22.703	25.094
December	57.760	49.375	54.971	26.720	22.900	26.373
Year	59.791	54.811	49.684	27.576	25.313	23.675

New York Quotations—Cents per ounce troy, fine silver.
London—Pence per ounce, sterling silver, 0.925 fine.

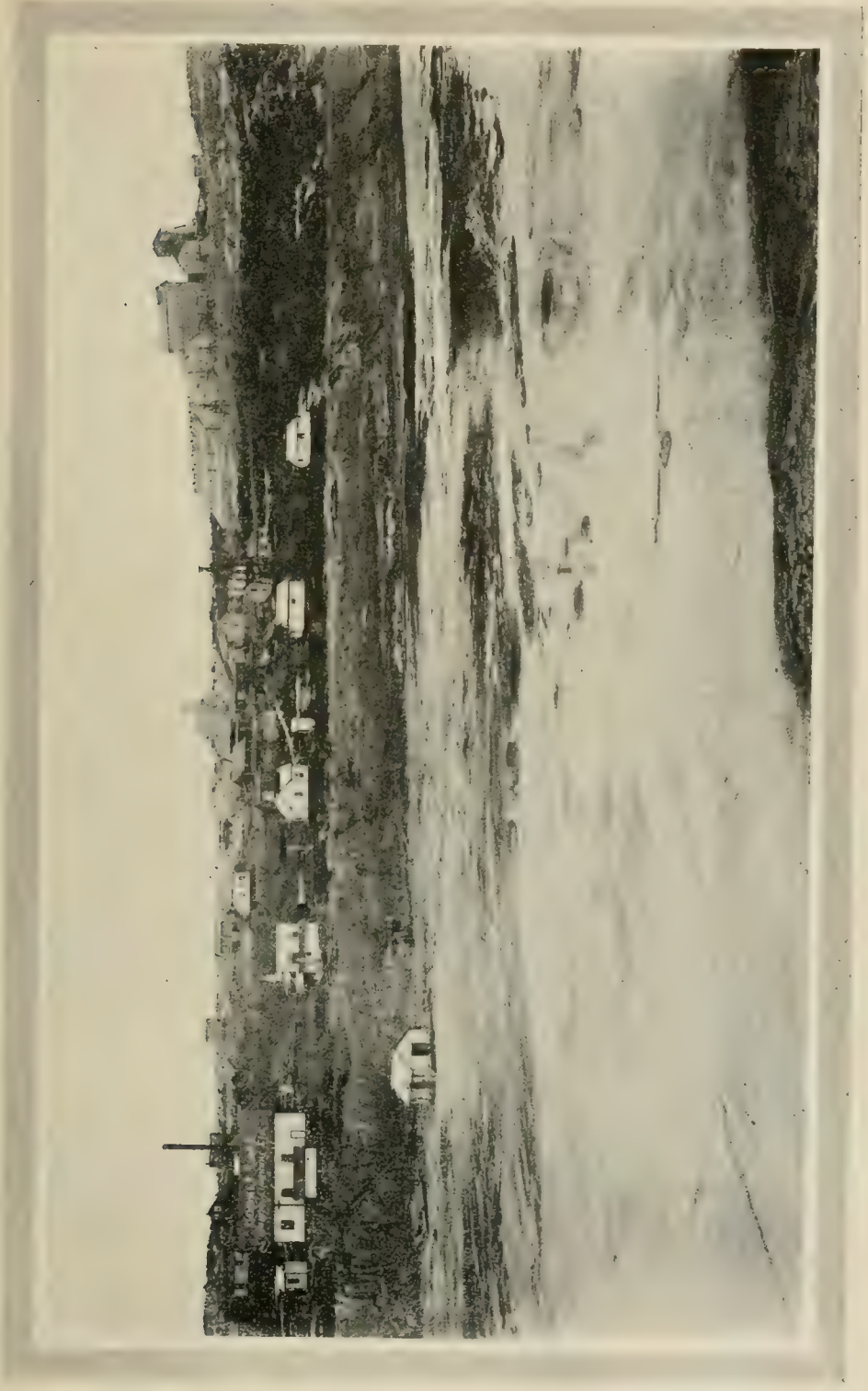
The yearly average price of silver for the thirteen years in which the Cobalt Camp has been in operation is shown in the following table:

Year.	New York.	London.
1903	52.221	24.750
1904	57.221	26.375
1905	60.352	27.812
1906	66.791	30.875
1907	65.327	30.188
1908	52.864	24.375
1909	51.503	23.687
1910	53.486	24.625
1911	53.304	24.563
1912	60.835	28.031
1913	59.791	27.563
1914	54.811	25.313
1915	49.684	23.675

New York Quotations—Cents per ounce troy, fine silver.
London—Pence per ounce, sterling silver, 0.925 fine.



Pumping of Cobalt Lake, looking south.



Pumping of Cobalt Lake, looking east.

Cobalt

Geology.

The silver deposits of the Timiskaming District may be divided into three groups according to their position relative to the diabase sill:

1. Above the sill.
2. In the sill.
3. Below the sill.

The veins of most of the producing mines fall within group 3. In other words groups 1 and 2 are missing due to erosion. Such are those on the Coniagas, Nipissing, Hudson Bay, Tretheway, Buffalo, Mining Corporation, LaRose and McKinley-Darragh around Cobalt Lake and Kerr Lake, Crown Reserve, Drummond, Lawson at Kerr Lake. One of the Kerr Lake veins, however, belonged to group 2 as it occurred in the diabase. Other examples of group 2 are the King Edward, Silver Cliff and some of the O'Brien veins. In the outlying camps good examples of group 2 are the Wettlaufer of South Lorrain, and Miller Lake O'Brien of Gowganda.

At Diabase Mountain the top of the hill is diabase while the base is composed of slates and conglomerates lying on Keewatin greenstones, so that certain veins as on the Penn Canadian and Bailey started in group 2 and continued down into group 3.

In south-east Coleman different conditions exist. Here the diabase sill is found intact with frequently a considerable deposit above it. The most noteworthy examples of group 1 are the veins of the Beaver and Temiskaming. On the Temiskaming property the upper contact between the Keewatin and the diabase is approximately 500 feet from the surface. Along this contact both above and below the Temiskaming and Beaver mines have recovered their richest ores. In order to ascertain the thickness of this diabase sill it was diamond drilled and the lower contact between the diabase and the Keewatin formations was found at an approximate depth of 1,670 feet from the surface. The sinking of the main shaft on the Temiskaming is now being continued to cut the lower contact in the hope of finding similar enrichments to those proven on the upper contact. If ore is found below this lower contact it will give the Temiskaming mine deposits in all three groups.

The Beaver and Temiskaming properties adjoin, the main shafts of the two properties being about 400 feet apart. The main shaft of the Beaver is down 1,350 feet while the Temiskaming is down 900 feet.

Production.

The following figures taken from the Preliminary Report of the Ontario Bureau of Mines show that since the opening of the mines at Cobalt the production of silver has amounted to over 234,000,000 ounces having a valuation of more than $122,000,000:

Pumping station on the pumped-out lake-bottom of Kerr Lake.

Temiskaming Mill, Cobalt, Ont.

Year.	Ounces.	Value.
		$
1904	206,875	111,887
1905	2,451,356	1,360,503
1906	5,401,766	3,667,551
1907	10,023,311	6,155,391
1908	19,437,875	9,133,378
1909	25,897,825	12,461,576
1910	30,645,181	15,478,047
1911	31,507,791	15,953,847
1912	30,243,859	17,408,935
1913	29,681,975	16,553,981
1914	25,162,841	12,765,461
1915	23,653,713	11,703,966
Totals	234,314,368	122,754,523

Nine Cobalt mines produced more than a million ounces each during 1915:

Mine.	Ounces.
Nipissing	4,610,051
Mining Corporation of Canada (Townsite)	2,776,589
Kerr Lake	2,109,355
Seneca Superior	1,996,257
Coniagas	1,916,616
Mining Corporation of Canada (Cobalt Lake)	1,566,206
Temiskaming	1,486,400
La Rose	1,071,694
McKinley-Darragh-Savage	1,061,827

The silver production according to camps was as follows:

	Ounces.	Value.
		$
Cobalt proper	23,187,545	11,481,265
Casey Township	223,939	105,846
Gowganda	242,229	116,856
Silver recovered from auriferous ores	77,126	38,496
Totals	23,730,839	11,742,463

MILLING IN COBALT DURING 1915.

Mills and Mines.	Tons Milled.	Concentrates.			Concentration.
		Jigs.	Tables.	Totals.	
		Tons.	Tons.	Tons.	Ratio.
1 Beaver	28,110	136.3	285.5	421.8	67–1
2 Buffalo	55,697	.....	.....	750.0	74–1
3 Casey Cobalt	14,061	9.6	247.5	257.1	55–1
4 Cobalt Lake	34,719	233.8	681.5	915.3	37–1
5 Cobalt Reduction	97,132	186.8	1,552.8	1,739.6	56–1
6 Coniagas	54,767	36.0	374.0	410.0	133–1
7 McKinley-Darragh	63,568	269.0	1,447.3	1,716.3	37–1
8 Northern Customs—					
La Rose	56,472	.....	.....	1,388.0	40–1
Chambers-Ferland	6,434	.....	.....	314.9	20–1
Right-of-Way	5,755	.....	.....	115.8	49–1
9 Penn Canadian	28,515	139.9	491.2	631.1	45–1
10 Seneca Superior	8,654	145.6	387.6	533.2	16–1
11 Timiskaming	26,927	49.1	538.6	387.7	70–1
12 Trethewey	6,113	7.4	68.9	76.3	80–1
Total	486,924	.....	.....	9,657.1	50–1

Cyanide Mills.	Tons Milled.	Bullion Produced Oz.
13 Dominion Reduction—		
Campbell & Deyell	10.0	
Comet (Drummond)	18,697.5	
Crown Reserve	27,201.5	
Dominion Reduction	1,537.9	1,537,336
Drummond Fraction	2,595.5	
Glen Lake	2.8	
Kerr Lake	28,001.4	
14 Nipissing, Low Grade	77,729.0	2,126,310.76
15 O'Brien	52,883.0	526,272.00
Total	206,858.6	4,139,918.76

Total tons milled by water concentrating mills	486,924
Total tons milled by Cyanide Mills	206,858
Total tons milled, 1915	693,782
" " 1914	743,531
" " 1913	664,845
" " 1912	455,517
" " 1911	381,871
" " 1910	305,513
" " 1909	126,421
" " 1908	49,424
Grand Total	3,420,904

Buffalo.

Ten thousand five hundred and twenty-six tons of slimes from the low-grade mill concentration were cyanided producing 89,696 ounces silver bullion.

Mining Corporation of Canada, Ltd.

The Cobalt Reduction Mill cyanided slimes from the several properties of The Mining Corporation of Canada with the following results:

Mine	Tonnage treated.	Bullion produced. Oz.
Townsite City	28,796.63	296,770.33
Cobalt Lake	4,887.58	57,221.86
Total	33,684.21	353,992.19

O'Brien.

Besides the bullion produced, this mill made and shipped 212 tons of concentrates containing 262,255 ounces silver.

Coniagas.

In addition there were 155 tons of mine slime.

McKinley-Darragh.

Ninety-two tons of high grade ore hand-picked on the picking belt before milling.

High Grade Mills.

PRODUCTION DURING 1915.

Mill.	Tonnage milled.		Bullion produced Oz.
	Raw Ore.	Concentrates.	
Buffalo	7	459	751,054
Nipissing —			
Nipissing	913	.....	2,151,709
Customs	552	.....	1,612,685
Totals	1,472	459	4,515,448

Buffalo. At the *Buffalo* high grade mill 806.5 tons of residues have been retreated during the year and 30,046 lbs. of mercury have been recovered. The price of mercury has advanced so much since this was purchased by the Buffalo Company that when now sold it nets the company an excellent return.

Nipissing. The only change made during the year in the high grade ore treatment is an important improvement whereby the large amount of amalgam produced is now retorted and melted to bullion in one heat in large graphite crucibles mounted in tilting furnaces.

The market for cobalt residue was poor on account of the war: the shipments amounted to only 326 tons.

ORE SHIPMENTS FROM COBALT SILVER DISTRICT FOR CALENDAR YEAR 1915.

Mine.	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Totals.
1. Beaver	83.17	31.66	99.24	68.51	42.67	36.43	32.25	.....	53.73	30.54	111.93	31.50	621.63
2. Buffalo	.....	.....	.....	.....	.....	.....	.....	.....	351.06	92.89	61.27	62.11	567.33
3. Casey Cobalt	28.60	.....	.....	.....	.....	32.40	29.25	39.32	34.60	29.77	42.31	24.73	260.98
4. Chambers Ferland	.....	39.99	43.25	.....	133.59	52.53	28.04	29.17	.....	.....	.....	.....	326.57
5. Cobalt Comet—By Dom. Red	54.00	28.85	44.00	55.00	55.00	66.00	66.00	55.00	44.00	55.00	56.37	55.00	634.22
6. Coniagas	105.80	57.53	124.19	43.07	74.58	108.95	86.36	78.09	37.85	32.09	104.02	61.72	914.25
7. Crown Reserve	17.48	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17.48
By Dom. Red	79.92	42.70	65.12	81.40	81.40	97.68	97.68	81.40	65.12	81.40	83.44	81.40	938.66
8. Kerr Lake	25.26	.....	.....	.....	30.37	30.32	.....	.....	.....	.....	.....	30.35	116.30
By Dom. Red	82.08	43.85	66.88	83.60	83.60	100.32	100.32	83.60	66.88	83.60	85.69	83.60	964.02
9. La Rose	221.53	45.52	169.18	145.73	127.92	130.73	130.81	130.88	130.75	87.27	130.55	174.67	1,625.54
10. McKinley-Darragh	126.74	123.37	171.16	155.50	211.30	247.93	116.39	113.85	195.19	81.91	161.92	73.59	1,778.85
11. Mining Cor'p. of Canada—													
Cobalt Lake Mine	23.31	65.05	.....	100.97	78.68	84.68	107.47	86.20	172.40	216.22	92.28	194.61	1,221.87
Townsite City Mine	345.14	249.13	248.56	303.39	318.01	283.98	86.89	138.62	102.59	202.80	114.57	169.61	2,563.29
12. Nipissing	35.47	30.23	64.85	.....	64.37	.....	47.97	64.73	.....	103.99	.....	61.86	473.47
13. O'Brien	28.84	30.46	50.87	.....	.....	56.86	.....	32.45	74.96	.....	73.77	47.91	396.12
14. Penn Canadian	20.44	50.43	63.24	.....	66.43	143.14	70.68	68.64	63.35	31.83	72.99	34.13	685.30
15. Peterson Lake—Seneca	61.93	31.27	66.11	72.97	65.59	62.75	63.19	64.89	143.96	141.27	130.37	104.50	1,008.80
16. Right-of-Way	.....	.....	.....	.....	.....	.....	44.40	.....	.....	38.91	.....	42.12	125.43
17. Silver Queen	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	19.69	19.69
18. Temiskaming	.....	98.85	31.44	43.90	40.48	106.07	.....	40.54	42.91	31.68	87.80	28.76	552.43
19. Trethewey	40.90	43.39	40.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	124.29
Totals	1,380.61	1,012.28	1,348.09	1,154.04	1,473.99	1,640.77	1,107.70	1,107.38	1,579.35	1,341.17	1,409.28	1,381.86	15,936.52

ORE SHIPMENTS FROM THE COBALT

(In tons of

	Mine.	1904	1905	1906	1907	1908
1.	Badger					
2.	Bailey			30.00		88.80
3.	Beaver					
4.	Buffalo		200.80	992.80	1,241.54	536.90
5.	Casey Cobalt					10.00
6.	Chambers Ferland					223.89
7.	City of Cobalt				50.61	761.04
8.	Cobalt Lake					225.97
9.	Cobalt Townsite				143.22	177.71
10.	Cobalt Comet (Drummond)	.50	32.15	274.70	104.13	1,161.38
11.	Colonial			15.00	40.38	
12.	Coniagas		30.60	422.02	2,447.37	610.25
13.	Crown Reserve					657.35
14.	Foster		83.85	117.00	312.13	191.20
15.	Green Meehan			37.03	98.39	
16.	Hargreave		28.45			
17.	Hudson Bay				149.53	1,094.23
18.	Imperial Cobalt				14.61	
19.	Kerr Lake		54.95	158.35	319.76	660.24
20.	King Edward		19.00		31.12	338.19
21.	La Rose	60.05	607.86	854.61	2,815.45	4,843.17
22.	Lawson		14.61		61.12	
23.	Lost and Found					
24.	Lumsden					
25.	McKinley-Darragh	20.00	447.09	80.45	742.42	1,808 39
26.	Mining Corporation of Canada :—					
	Cobalt Lake Mine					
	Townsite City Mine					
27.	Nancy Helen				30.10	201.32
28.	Nipissing	57.00	486.02	2,125.08	2,538.26	3,571.96
29.	North Cobalt					
30.	Nova Scotia			43.95	272.21	237.95
31.	O'Brien		26.32	114.18	1,491.61	3,459.51
32.	Penn Canadian				77.33	187.99
33.	Petersen Lake (Leases)					
	Gould					
	Little Nipissing					40.67
	Nova Scotia					
	Seneca Superior					
34.	Provincial					75.84
35.	Princess				3.93	
36.	Red Rock				45.71	
37.	Right of Way			46.25	129.37	750.04
38.	Rochester					
39.	Silver Bar					.58
40.	Silver Cliff					160.44
41.	Silver Leaf		9.00		46.36	197.03
42.	Silver Queen		44.73	130.94	478.57	885.70
43.	Temiskaming				204.32	795.20
44.	Temiskaming Cobalt			20.47	67.98	
45.	Trethewey	21.00	218.58	198.48	833.58	1,408.69
46.	University		16.00	55.28	60.23	
47.	Victoria					.47
48.	Violet		16.00	20.00		
49.	Waldman					
50.	Wyandoh					
	Totals	158.55	2,336.01	5,836.59	14,851.34	25,362.10

Cobalt Lake, Cobalt Townsite and City of Cobalt are shown under the name of The Mining Corporation of Canada from 1914.

DISTRICT FOR THE YEARS 1904–1915.

2,000 lb.)

1909	1910	1911	1912	1913	1914	1915	Totals.
.....	.....	27.10	.....	.....	.....	.....	27.10
36.85	.....	20.00	41.57	150.35	20.50	.....	388.07
51.38	140.06	790.81	402.97	292.21	392.07	621.63	2,691.13
648.86	1,185.77	1,275.19	1,251.64	66.13	.....	567.33	7,966.96
8.50	48.40	277.74	214.34	401.54	608.30	260.98	1,829.80
517.88	885.92	622.85	501.29	223.78	308.06	326.57	3,610.24
566.82	329.40	281.30	230.00	105.14	495.71	.....	2,820.02
95.47	296.80	2,111.32	1,085.22	1,196.33	919.01	.....	5,930.12
27.35	310.99	703.51	1,944.77	2,762.54	1,950.73	.....	8,020.82
1,225.47	2,194.41	714.83	458.85	610.06	587.03	634.22	7,997.73
.....	178.60	114.10	86.48	21.56	.....	.....	456.12
806.93	1,261.46	1,813.89	2,119.87	1,620.40	1,217.26	914.25	13,264.30
3,167.52	2,184.25	977.32	561.65	791.15	1,067.00	956.14	10,992.38
113.90	.....	.....	.....	.....	4.50	.....	822.58
.....	.....	102.98	.....	12.96	.....	.....	251.36
.....	343.68	102.44	17.35	.....	.....	.....	491.92
743.64	260.33	898.88	694.55	609.14	647.95	.....	5,098.25
.....	.....	.....	.....	.....	.....	.....	14.61
1,173.42	5,088.78	1,292 58	788.10	933.35	628.42	1,080 32	12,178.27
146.58	134.12	20.00	.....	87.21	.....	.....	776.22
6,757 21	5,131.53	3,581.54	3,511.40	3,275.14	1,582.54	1,625.54	34,646.04
.....	.....	.....	.....	.....	.....	.....	75.73
.....	.....	.....	65.20	8.80	.....	.....	74.00
.....	.....	.....	.....	20.00	.....	.....	20.00
1,056,49	2,396.39	3,258.64	2,673.40	2,865.66	2,903.50	1,778.85	20,008.28
.....	.....	.....	.....	.....	223.37	1,221.87	1,445.24
.....	.....	.....	.....	.....	533.40	2,563.29	3,096.69
116.32	.....	.....	.....	.....	.....	.....	347.74
6,470 52	6,833.81	2,952.20	1,869.27	1,950.22	1,235.07	473.47	30,562.88
6.87	.....	3.00	.....	.....	.....	.....	9.87
224.79	.....	.....	.....	.....	.....	.....	778.90
1,419.11	608.57	628.44	711.43	703.43	523.21	396.12	10,081.93
339.01	285.62	22.40	126.35	332.18	460.53	685.30	2,516.71
.....	.....	.....	.....	.....	122.52	.....	122.52
.....	.....	.....	.....	9.00	50.05	.....	59.65
39.62	313.76	28 45	.....	.....	.....	.....	422.50
121.15	.....	.....	.....	.....	.....	.....	121.15
.....	.....	.....	432.97	457.93	398.96	1,008.80	2,298 66
.....	52.05	100.54	22.22	.....	.....	.....	250.65
.....	.....	.....	.....	.....	.....	.....	3.93
.....	.....	.....	.....	.....	.....	.....	45.71
1,608.99	981.41	636.06	243.24	146.12	184.16	125 43	4,881.07
.....	28.30	.....	.....	.....	.....	.....	28.30
.....	.....	2.72	.....	20.00	20.00	.....	43.30
149.06	156.84	92 30	.....	48.05	.....	.....	606.69
.....	.....	.....	.....	.....	.....	.....	252.39
316.64	.....	.....	31.25	201.98	105.42	19.69	2,214 92
852.14	1,119.12	855.60	967.31	406.26	417.56	552.43	6,169.94
.....	.....	.....	.....	.....	.....	.....	88.45
1,134.50	536.64	602.98	579.10	587.54	613.28	124.29	6,858.66
.....	.....	.....	.....	.....	.....	.....	231.51
.....	.....	.....	.....	.....	.....	.....	.47
.....	.....	.....	.....	.....	.....	.....	36.00
.....	38.81	.....	.....	.....	.....	.....	38.81
.....	24.15	.....	.....	.....	.....	.....	24.15
29,942.99	33,976.97	24,921.71	21,631.79	20,916.16	18,220.71	15,936.52	214,091.44

TABLE SHOWING SHIPMENTS FROM ELK LAKE AND GOWGANDA FOR THE YEARS 1909-1915.

(In tons of 2,000 lb.)

Mine.	1909	1910	1911	1912	1913	1914	1915	Total.
Elk Lake.								
Beaver Auxiliary						1.26		1.26
Downey						9.60		9.60
Hitchcock			4.00					4.00
Lucky Godfrey		17.00						17.00
Mapes Johnston							2.71	2.71
Moose Horn		3.00						3.00
Gowganda.								
Bartlett	2.00		6.75					8.75
Bonsall		6.78						6.78
Boyd Gordon		30.00	1.25					31.25
Burke Remey		2.00						2.00
Calcite Lake				8.50				8.50
Canadian Gowganda				8.00				8.00
Everett		8.35						8.35
Mann				16.00	20.00	20.00		56.00
Millerett		346.30	128.00	118.00				662.30
Miller Lake O'Brien		31.00	116.50	112.60	172.90	118.80	116.70	668.50
Powerful		1.00						1.00
Reeves Dobie		61.00	5.00					66.00
Welsh		1.25						1.25
Totals	2.00	506.68	262.50	333.10	192.90	149.66	119.41	1,566.25

STATEMENT SHOWING SHIPMENTS FROM COBALT DISTRICT, INCLUDING GOWGANDA, ELK LAKE AND SOUTH LORRAIN.

(In tons of 2,000 lb.)

Year.	Cobalt.	Gowganda.	Elk Lake.	S. Lorrain.	Totals.
1904	158.55				158.55
1905	2,336.01				2,336.01
1906	5,836.59				5,836.59
1907	14,851.34				14,851.34
1908	25,362.10			43.25	25,405.35
1909	29,942.99	2.00		112.59	30,057.58
1910	33,976.97	486.68	20.00	226.64	34,710.29
1911	24,921.71	267.00	4.00	530.51	25,733.22
1912	21,631.79	333.10		478.00	22,442.89
1913	20,916.16	192.90		120.00	21,229.06
1914	18,220.71	138.80	10.86	49.46	18,419.83
1915	15,944.82	119.41			16,064.23
Totals	214,099.74	1,539.89	34.86	1,560.45	217,234.94

BULLION SHIPMENTS FROM THE COBALT DISTRICT, CALENDAR YEAR 1915.

Mine.	Fine oz.	Value. $
Buffalo	840,750.00	416,842.00
Casey Cobalt	4,815.36	2,275.23
Cobalt Comet	233,081.80	115,402.36
Crown Reserve	378,060.28	187,833.47
Dominion Reduction	824,237.66	409,514.24
Kerr Lake	62,730.54	23,512.78
McKinley-Darragh	8,741.46	4,152.19
Nipissing and Customs	5,898,809.13	2,954,638.55
O'Brien	536,327.00	285,229.00
Penn Canadian	1,755.50	831.39
Townsite-City	317,912.45	166,013.85
Trethewey	2,507 81	1,118.63
Total	9,109,728.99	4,567,363.69

DIVIDENDS PAID BY COBALT MINES TO 31ST DECEMBER, 1915.

Mining Company.	Percentage Paid During 1915	Amount of Dividends and Bonuses Paid During 1915	Total Percentage Paid to 31st Dec., 1915	Total amount of Dividends and Bonuses Paid to 31st Dec., 1915.
		$ c.		$ c.
1 Beaver	6	120,000 00	29.5	590,000 00
2 Buffalo			282	2,787,000 00
3 Caribou-Cobalt (Drummond)	12.5	125,000 00	22.5	225,000 00
4 Casey Cobalt				203,249 33
5 City of Cobalt			23	139,321 42
6 Cobalt Central			4	192,845 00
7 Cobalt Lake			15.5	465,000 00
8 Cobalt Silver Queen			21	315,000 00
9 Cobalt Townsite			97.5	966,726 31
10 Coniagas	15	600,000 00	196	7,840,000 00
11 Crown Reserve	8	141,505 12	345	6,102,399 30
12 Foster			5	45,774 00
13 Hudson Bay (T.&H.B.)			25,000	1,940,250 00
14 Kerr Lake (Holding Co.)	20	600,000 00	204	6,120,000 00
15 La Rose (Holding Co.)	5.5	412,122 42	74.5	*1,204,862 00 5,378,120 47
16 McKinley-Darragh	12	269,723 04	205	4,606,751 26
17 Mining Corporation of Canada	25	518,750 00	37.5	778,125 00
18 Nipissing Mines Co. (Holding Co.)	20	1,200,000 00	224	†400,000 00 13,440,000 00
19 Right of Way Mining Co.			65	324,643 93
Right of Way Mines, Ltd.			13	219,110 00
20 Peterson Lake	5.25	126,095 55	10.5	252,191 10
21 Seneca Superior	70	335,218 80	205	981,212 20
22 Temiskaming	3	75,000 00	59	1,459,156 25
23 Trethewey			108	1,061,998 50
24 Wettlaufer			45	637,465 50
Totals		4,523,414 93		57,614,201 57

* Profits paid to owners previous to May 31st, 1908.
† Paid to Syndicate in 1905-6.

Smelting.

At the present time when an endeavor is being made to bring more within the British Empire the complete cycle of operations of the winning and refining of our mineral resources, it is interesting to find out how much of the production of the Cobalt mines is refined in Canada.

In the early days of the Cobalt Camp all ore had to be shipped to the United States for treatment. Soon Canadian smelters were started which treated high grade ore, and the latest development has been the building of the so-called High Grade Mills at Cobalt, which produce silver bullion by a combination amalgamation—cyanide process.

An examination of the figures for the calendar years 1914 and 1915 shows that the percentage of the silver bullion produced from Cobalt ores was in round numbers:

	1914.	1915.
	%	%
Cobalt Mills Amalgamation and Cyanide	44	39
Southern Ontario Smelters	39	45
United States Smelters	17	16
	100	100

The sixteen per cent. still going to the United States consists of some high grade ore along with all the low grade material both ore and concentrates shipped, as the Canadian smelters are not equipped to handle this low grade material.

In the high grade mills at Cobalt the silver only is recovered, the cobalt, nickel and arsenic being left in the residue for future treatment or sold for the cobalt content. The Deloro and Coniagas smelters are equipped with complete refineries so that besides producing silver bullion they also produce and market arsenic, cobalt and nickel.

The cobalt and nickel have been produced mostly as oxides, but as there has recently been a call for the metals they are now also produced in that form.

Coniagas Reduction Company.

No alterations have been made in the purchasing schedule of the company during the year. The only addition to the plant to be reported is the erection of extra storage bins for by-products for which there has been little or no sale since the outbreak of the war. The output of the smelter up to the 31st December, 1915, is as follows:

Year.	Ore Treated Tons.	Silver Fine Oz.	Cobalt Oxide Tons.	Nickel Oxide Tons.	White Arsenic Tons.
1908	266.80	360,683	5.5	1.5	13.5
1909	1,116.90	1,659,604	.9	.....	100.0
1910	2,017.25	3,485,243	53.8	13.2	557.7
1911	2,821.50	5,770,271	60.5	17.3	766.1
1912	2,288.77	4,824,632	129.0	50.7	636.7
1913	2,509.80	4,977,012	250.6	115.6	319.4
1914	1,968.78	3,865,546	171.9	124.9	399.2
1915	2,541.00	3,445,661	59.0	99.8	472.8
Total	15,530.80	28,388,652	731.2	423.0	3,265.4

Deloro Mining and Reduction Company, Ltd.

During the year a new building and complete plant for the production of cobalt and nickel metals was completed and put into operation. A plant has also been installed for the manufacture of the alloy known as "Stellite," a high speed tool metal which is far superior for certain purposes to any high speed tool steels at present known. This alloy contains a considerable quantity of cobalt and chromium, but no iron. Considerable progress has been made in connection with the introduction of electroplating with cobalt on a commercial scale, and it now looks probable that it will be adopted to a considerable extent.

The by-product markets were somewhat restricted on account of the war, but the prospects look better for 1916.

The plant was operated at a considerably increased tonnage over the previous year and present indications point to a still larger tonnage being handled in 1916.

Production of Deloro Smelter, 1908–1915.

Year.	Ore Treated Tons.	Silver, Fine Oz.	Cobalt and Mixed Oxides Tons.	Refined Arsenic Tons.
Previous to 1913	11,065	20,339,860	500	3,275
1913	2,920	6,350,500	190	893
1914	3,612	5,207,000	300	1,038
1915	4,634	6,429,794	256	1,634
Totals	22,231	38,327,154	1,246	6,840

The Standard Smelting and Refining Co. moved its works during the year from North Bay to Chippewa, Ontario, where more commodious works are being erected. It is expected that these will be ready to treat ore by the spring of 1916.

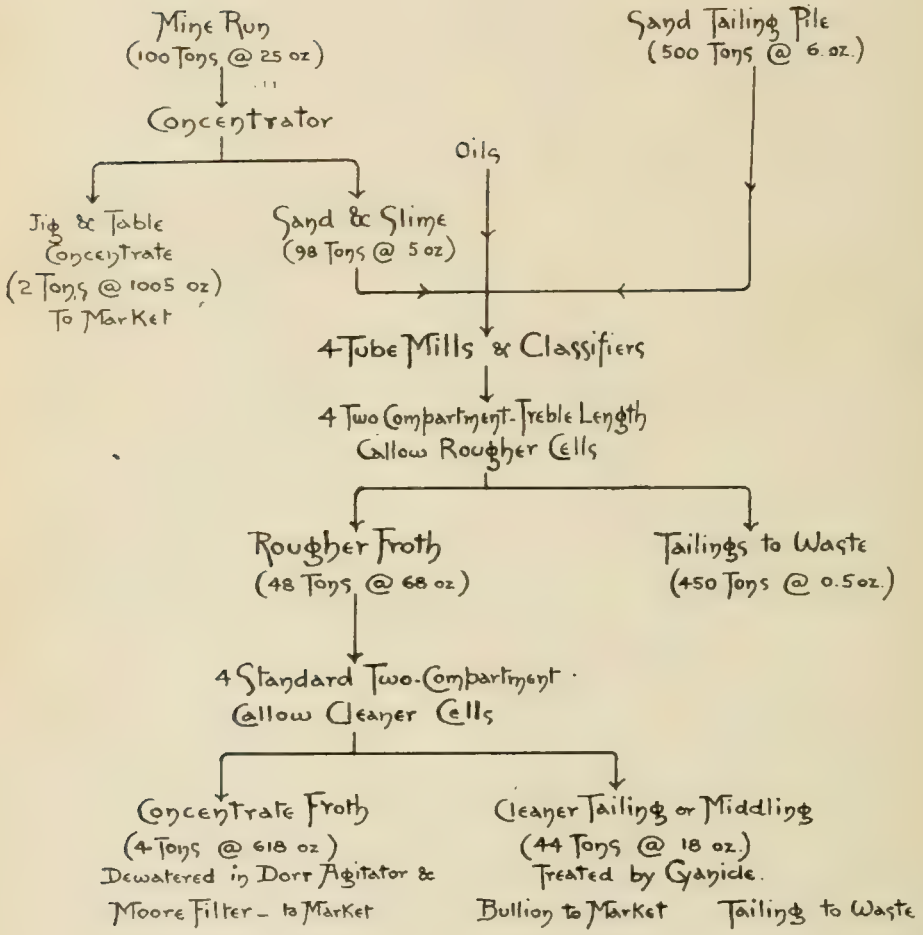
Concentration by Oil Flotation.

The applicability of concentration by oil flotation to Cobalt ores has been demonstrated and a number of companies are now planning oil flotation installations.

The most extensive experimental work has been carried on at the Buffalo Mine where a 50-ton plant was put into operation in the fall of 1915 using the Callow Pneumatic Process. The results obtained from this plant were so satisfactory that a larger installation was deemed desirable, and work is now well under way installing a flotation plant to have a daily capacity of 600 tons.

The fine grinding equipment will consist of four 5 ft. 6 in. x 20 ft. 0 in. tube-mills and the flotation equipment will be four, two-compartment, treble length, Callow Pneumatic cells used as roughers, followed by four standard two-compartment Callow Pneumatic cells used as cleaners. The old cyanide plant will be used for de-watering the flotation concentrate and for the treatment by cyanide of a quantity of flotation middling.

The process is one which is particularly applicable to the low grade material which makes up the tailing piles of the camp and will make available for treatment immense tonnages of rock which heretofore have been considered of little or no immediate value.



Flow Sheet—Flotation Plant—Buffalo Mines, Ltd.

At the Buffalo it is proposed to treat 600 tons daily made up of 100 tons of mine rock and 500 tons of material from the old tailing pile. The mine rock will be run through the concentrator as formerly and the tailing resulting will be sent to tube-mills for further grinding. The 500 tons of material from the tailing pile will be sent directly to tube-mills and the whole product ground to pass 120 mesh. This material after the addition of suitable oils to be sent to the flotation cells where the valuable mineral is floated and collected and the worthless gangue run to waste.

The product collected, containing the silver values, will be run to cleaner cells where a further separation will be made dividing the values into two products, one for shipment and one which will be treated by cyanide on the property.

The tonnages and values in the different products, based upon the experimental work done, will be approximately as indicated in the accompanying flow sheet.

Good results are obtainable by returning the cleaner tailing to the rougher cell. There appears at present to be a decided advantage, however, in treating a small tonnage of a middling by cyanide owing to the slightly greater total recovery and to the saving effected in freight and smelter charges.

Construction is well under way and the plant should be in operation early in the summer of 1916.

The McKinley-Darragh-Savage Company is installing a 200-ton unit for the treatment of current tailing, and several other companies are carrying on flotation experimental work and have plants in contemplation.

Casey Township

Considerable prospecting was done in this district, but the only producer yet is the Casey Cobalt.

Gowganda

Shipments have continued regularly from the *Miller-Lake-O'Brien Mine* throughout the year, but this was the only shipping operating property.

Small forces have been operating on the *Hewitt Claim*, as well as on the *Powerful* at Calcite Creek, and the *Rogers Claims* at Flatstone Lake. In December the *Reeves-Dobie* claims were re-opened under new management.

South Lorrain

No shipments were made during the year, but the *Bellellen*, *Keeley* and *Currie* carried on some operations.

NICKEL

The Mond Nickel Company continued during the year to take ore from the *Alexo Mine* to be mixed with their own ore and treated at their smelter at Coniston, Ontario. The Alexo ore has a higher average nickel content than the Sudbury ores, but is very low in copper. To work the Mond process to the best advantage the nickel and copper contents of the ores treated should be approximately equal. The Mond Company's ores are higher in copper than in nickel, so they use the Alexo ores as an equalizer. The magnesian content is also a favorable feature.

A statement of shipments for the year 1915 is given herewith:—

NICKEL SHIPMENTS OVER THE T. & N. O. RY.

For the Calendar Year 1915.

Month.	Tons (2,000 lb.)
January	808.03
February	839.15
March	878.95
April	665.00
May	981.95
June	989.10
July	1,070.80
August	766.50
September	583.90
October	799.85
November	1,305.10
December	1,282.95
Year	10,971.55 tons.

COPPER

A shipment of 22½ tons of copper ore was made from a property on Portage Bay, near Latchford, to the sampling works of Campbell & Deyell, at Cobalt, whence it was shipped in January, 1916, to the United States Metals & Refining Company, at Chrome, New Jersey. The ore is chalcopyrite and assays:—

Copper ..... 13.33 per cent.
Silver ..... 12.6 oz.

ZINC AND LEAD

The old *Wright Mine* on the Quebec side of Lake Temiskaming, which was known as long ago as 1744, was recently pumped out by the owners, the Timmins-McMartin Syndicate. It was thoroughly sampled, but future development of this property has not yet been announced. The ore is a galena containing a little silver.

Wolf Lake.

Several promising veins containing zinc blende and galena have been located near Wolf Lake, about three miles from Bourkes station, mileage 183½, on the T. & N. O. Ry., but very little development has yet been done on them.

MOLYBDENITE

Specimens of excellent molybdenite have been produced from small veins from properties in the vicinity of Tomiko, mileage 28½, on the T. & N. O. Ry., but commercial quantities have not yet been produced.

LIMESTONE

The requirements of the sulphite-pulp plant of the Abitibi Power & Paper Co., of Iroquois Falls, for a dolomitic limestone are supplied from a quarry near Haileybury. During the year shipments of this material amounted to sixty-eight cars, containing 2,401 tons.

RECORD OF DEEP WELLS ALONG THE LINE OF THE T. & N. O. RY.

In the year 1914 Report a list was given of some of the wells drilled along the T. & N. O. Ry., with the idea that such information should be put on record in order to be of value to others putting down wells in the same localities. While the record is far from complete the work has already been justified and better records are likely to be kept of any future drilling. The records of a number of wells, mostly drilled during 1915, are published herewith.

The general conclusions reached in connection with the wells drilled are:—

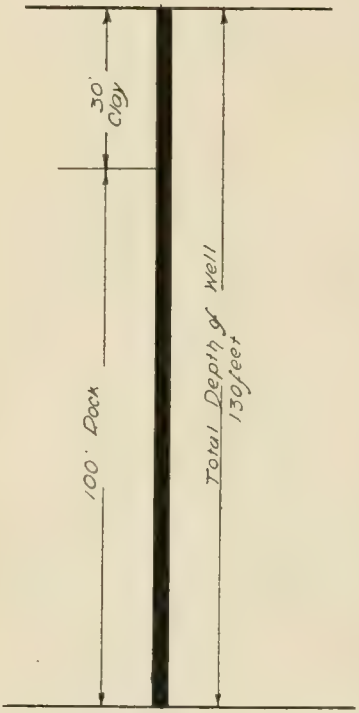
(*a*) Little or no water is found in clay or hard pan.

(*b*) Plenty of water is usually found in clean sand or gravel.

(*c*) In drilling limestone, water is usually found on the top of the rock, with a better supply lower, particularly on the contact of the limestone with harder rock.

(*d*) It is rare to find water in hard rock.

T. & N. O. Ry.
RECORD OF DEEP WELLS AT MONTEITH
WELL NO. 1.

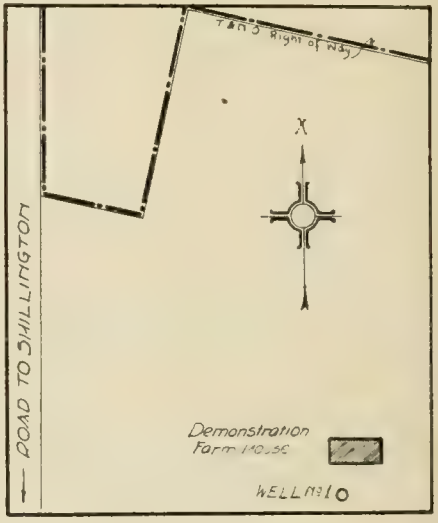


LOCATION - About 15' in rear of Demonstration Farm House

DATE BEGAN DRILLING - 1914

WELL COMPLETED - 1914

NOTE - Well delivers from 3 to 6 Barrels per day



NORTH BAY, ONT. FEB 7th 1916

Correct -

Approved -

Chief Draughtsman

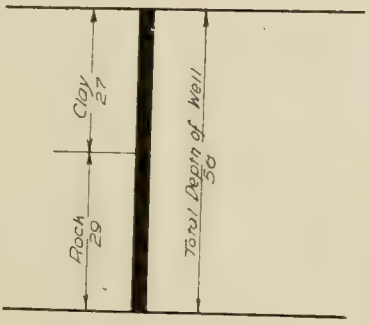
C.E. & S. of W.

DRAWN BY R.S.H.
TRACED BY R.S.H.

T & N. O. Rly

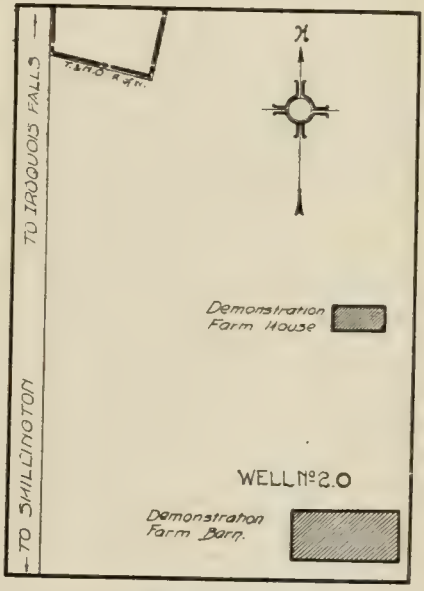
RECORD OF DEEP WELLS AT MONTEITH

WELL No 2



LOCATION - About 20' North of Barn Demonstration Farm, Monteith.
DATE BEGAN DRILLING:- 1914
WELL COMPLETED:- 1914

NOTE:- No Water Obtained



NORTH BAY ONT FEB. 7th 1916

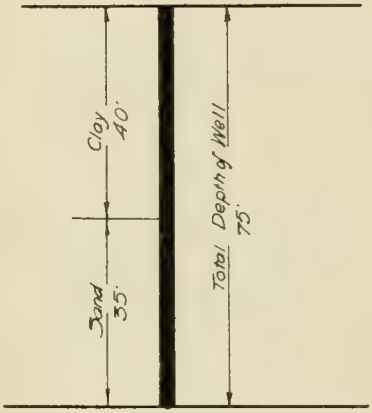
Correct -

Approved -

Chief Draughtsman

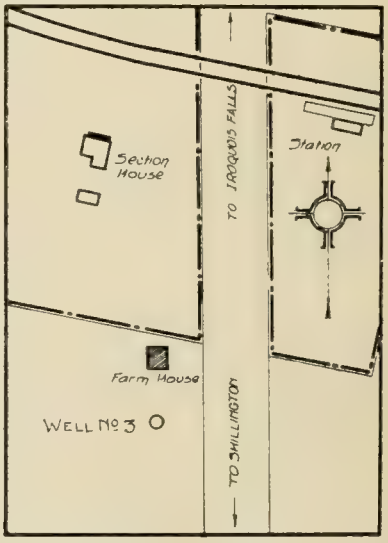
C E & S of M

T. & N. O. Rly.
RECORD OF DEEP WELLS
AT MONTEITH
WELL No 3



LOCATION - About 30' South of Farm House in rear of Section House On Township road.
DATE BEGAN DRILLING - 1915
WELL COMPLETED - 1915.

NOTE - This well pumps 3½ gals per minute. Had water 24 hours after began drilling.



NORTH BAY, ONT FEB. 7TH 1916

Correct.-

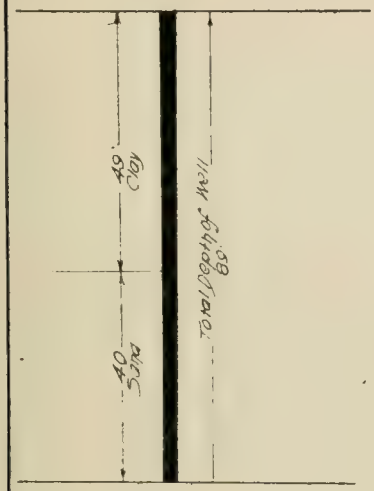
Approved.-

Chief Draughtsman

C E & S of M

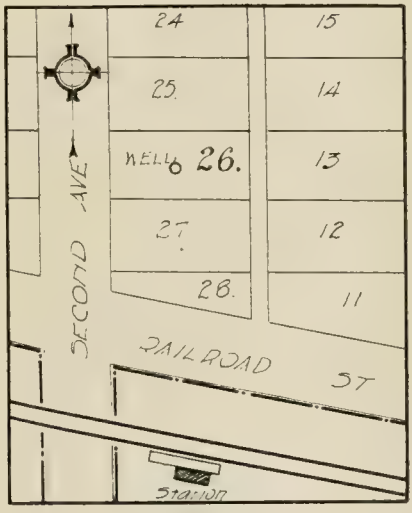
DRAWN BY R S M
TRACED BY R S M

T. & N. O. R.
RECORD OF DEEP WELLS
AT MONTEITH
WELL No 4.



LOCATION - J Whittons on Lot 26 Con II Twp of Walker Townsite of Monteith.
DATE BEGAN DRILLING -
WELL COMPLETED -

NOTE - Well pumped 4 gals per minute from the sand This well was pumped for a day and gave just as much water when stopped pumping as it did when started to pump



NORTH BAY ONT FEB 7th 1916

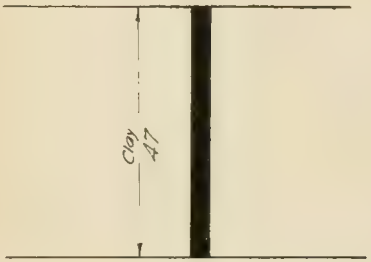
Correct -

Chief Draughtsman

Approved -

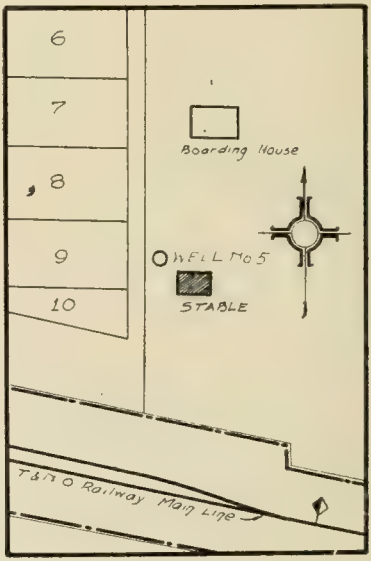
C.E. & S. of M.

T & N O Rly
RECORD OF DEEP WELLS
AT MONTEITH
WELL No 5



LOCATION - North of the Monteith Pulp and Lumber Co's Stable
DATE BEGAN DRILLING -
WELL COMPLETED -

NOTE -



NORTH BAY ONT FEB 7th 1916

Correct -
Chief Draughtsman

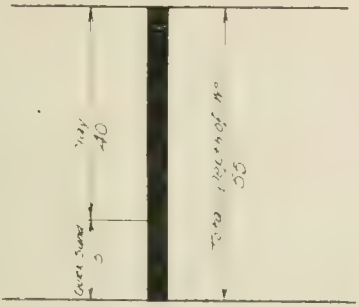
Approved -
C E & S of M

T & M C. Co.

RECORD OF DEEP WELLS

AT MONTEITH

WELL Nº 6



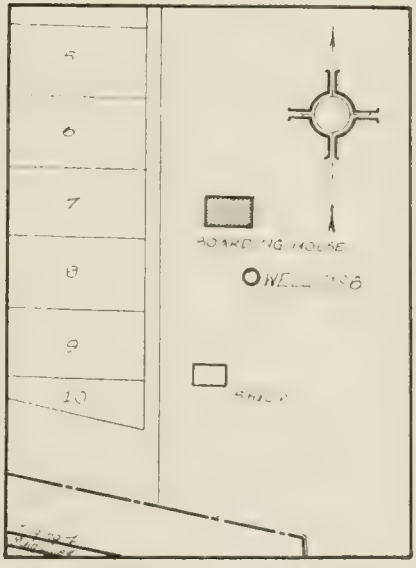
LOCATION - At S. end of Main St.

Drilled under Days Board of Health

DATE BEGAN DRILLING -

WELL COMPLETED -

NOTE: -



Correct -

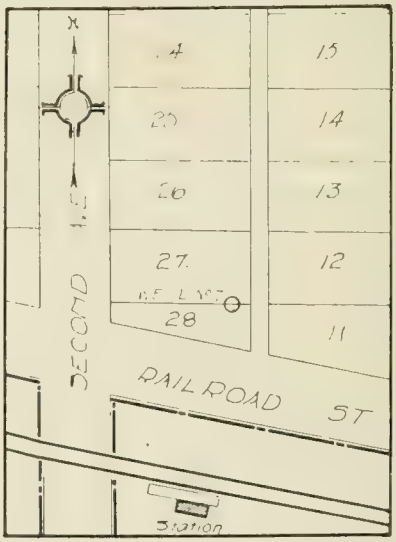
Approved -

T & N O R.
RECORD OF DEEP WELLS
AT MONTEITH
WELL No. 1.

LOCATION - On north side of track

DATE BEGAN DRILLING -
WELL COMPLETED

NOTE -

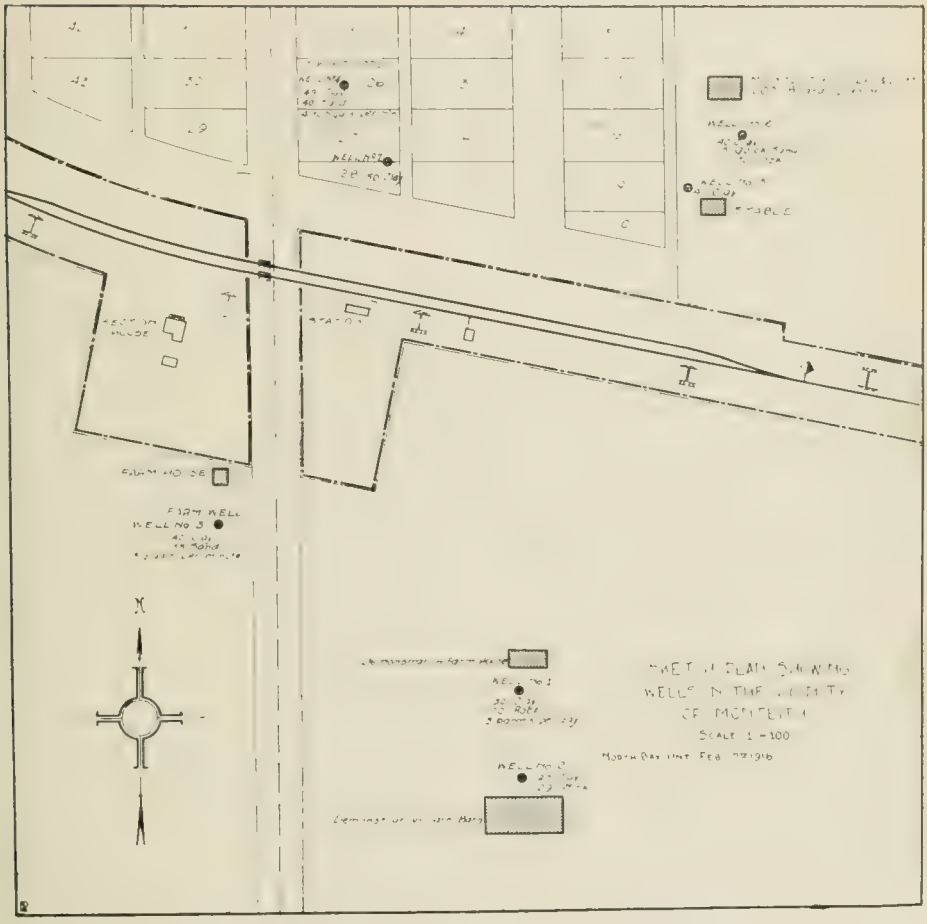


NORTH BAY ONT FEB 7TH 1916

Correct—

Supt. Div. Engineer

DRAWN BY R.S.H.
TRACED BY R.S.H.



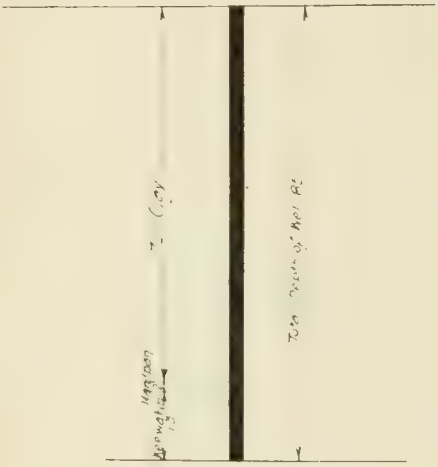
Sketch plan showing wells in the vicinity of Monteith.

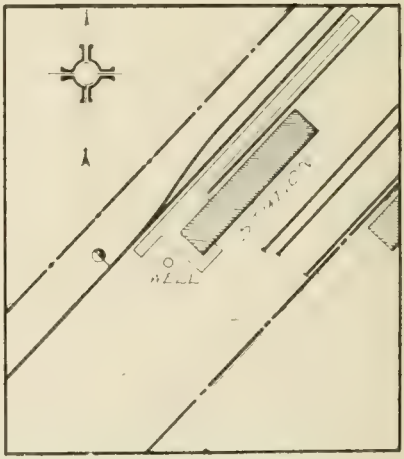
T&N O R

RECORD OF DEEP WELLS

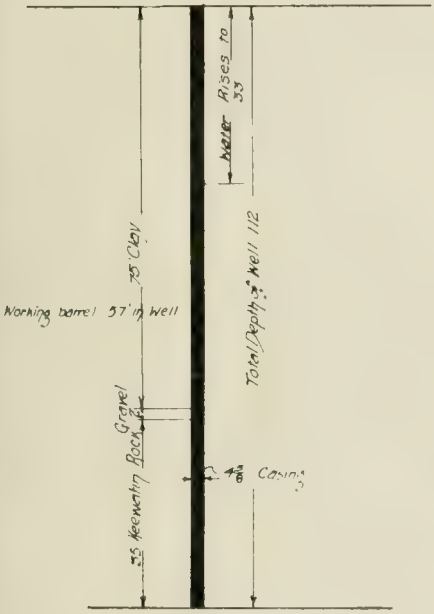
AT CHARLTON

WELL No 1



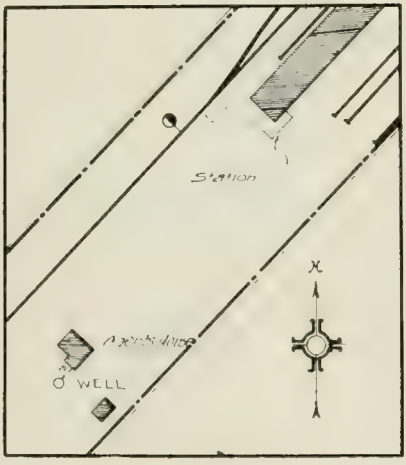


T & N O Rly
RECORD OF DEEP WELLS
AT CHARLTON
WELL No 2



LOCATION About 20 West of Agents house
DATE BEGAN DRILLING - April 27th 1915
WELL COMPLETED - June 16th 1915

WATER LEVELS - Water rises within 33 ft of Surface when delivering 35 gals per hour



NORTH BAY ONT JAN 17th 1916

Correct G H Dickson
Chief Draughtsman

Approved - [illegible]
Chief Engineer

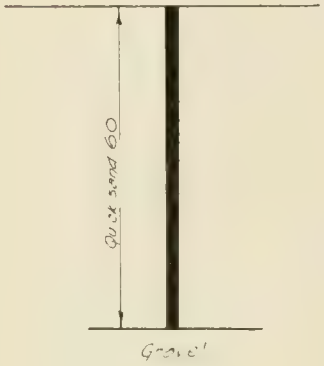
DRAWN BY R & H.
TRACED BY R.S.H

T & N O Ry

RECORD OF DEEP WELLS

AT COCHRANE

6 WELLS

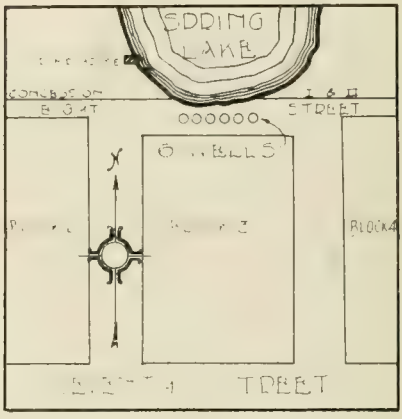


LOCATION - South end of Spring Lake on the Town Farm Lot No 22 Con No 2 Twp of Blackmeyer Town of Cochrane

DATE BEGAN DRILLING

WELL COMPLETED -

NOTE - Springs showed on the surface of the ground before the wells were driven we drilled in a bed of quicksand and went down to a depth of 60 feet and found gravel from which the water flows over the top of the wells Some of these 6 wells are three inch pipe and others not quite that much



DRAWN JULY 2, 1910

CHIEF ENGINEER

APPROVED -

CHIEF DRAUGHTSMAN

CHIEF ENGINEER

First Through Train of Western Grain over the New Transcontinental Route (C. G. Rys., T. & N. O. Ry., G. T. Ry.).
Moved January 5th, 1916.

INDEX.

PAGE

General . . . 7
Gold . . . 10
Porcupine . . . 10
Hollinger Gold Mines, Limited . . . 10
Acme Gold Mines, Limited . . . 16
Dome Mines Company, Limited . . . 21
McIntyre Porcupine Mines, Limited . . . 26
Porcupine Crown Mines, Limited . . . 27
Porcupine Vipond Mines, Limited . . . 29
Schumacher Gold Mines, Limited . . . 30
Dome Lake Mining & Milling Company . . . 30
North Thompson (associated) Gold Mine, Limited . . . 33
Sesekinika . . . 33
Swastika . . . 33
Kirkland Lake . . . 35
Tough-Oakes Gold Mines, Limited . . . 35
Layout of Tough-Oakes Mine . . . 36
Teck-Hughes Gold Mines, Limited . . . 37
Proposed Flow Sheet Teck-Hughes Gold Mines, Limited . . . 38
The Lake Shore Mines, Limited . . . 39
Goodfish . . . 39
Munro . . . 39
Boston Creek . . . 40
Kowkash . . . 40
Silver . . . 40
Cobalt—Geology—Production . . . 44
Milling in Cobalt during 1915 . . . 47
Cobalt Ore Shipments, Calendar Year 1915 . . . 49
Ore Shipments, Cobalt District, Years 1904-1915 . . . 50
Shipments from Elk Lake and Gowganda, Years 1909-1915 . . . 52
Shipments from Cobalt District, including Gowganda, Elk Lake and South Lorrain . . . 52
Bullion Shipments 1915 . . . 53
Dividends paid by Cobalt Mines to December 31st, 1915 . . . 53
Smelting . . . 54
Coniagas Reduction Company . . . 54
Deloro Mining and Reduction Company, Limited . . . 55
Concentration by Oil Flotation . . . 55
Flow Sheet—Flotation Plant—Buffalo Mines, Limited . . . 56
Casey Township . . . 57
Gowganda . . . 57
South Lorrain . . . 57
Nickel . . . 57
Copper . . . 58
Zinc and Lead . . . 58
Molybdenite . . . 58
Limestone . . . 58
Record of Deep Wells along line T. & N. O. Railway . . . 59-70
Illustration—First through train of Grain over New Transcontinental Route (C. G. Rlys., T. & N. O. Rly., G. T. Rly.), moved January 5th, 1916 . . . 71

Eighth Annual Report

OF THE

HYDRO-ELECTRIC POWER COMMISSION

OF THE

PROVINCE OF ONTARIO

FOR THE YEAR ENDED OCTOBER 31st

1915

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO

TORONTO:
Printed and Published by A. T. WILGRESS, Printer to the King's Most Excellent Majesty
1916

Printed by
WILLIAM BRIGGS
Corner Queen and John Streets
TORONTO

To His Honour, Colonel Sir John Hendrie, K.C.M.G., C.V.O.,

Lieutenant-Governor of Ontario.

May it Please Your Honour:

The undersigned has the honour to present to Your Honour the Eighth Annual Report of the Hydro-Electric Power Commission of Ontario for the fiscal year ending October 31st, 1915.

Respectfully submitted,

ADAM BECK,

Chairman.

Toronto, February 15, 1916.

Colonel Sir Adam Beck, K.B.,

Chairman, Hydro-Electric Power Commission,

Toronto, Ont.

Sir,—I have the honour to transmit herewith the Eighth Annual Report of the Hydro-Electric Power Commission of Ontario for the fiscal year ending October 31st, 1915.

I have the honour to be,

Sir,

Your obedient servant,

W. W. Pope,

Secretary.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO

COLONEL SIR ADAM BECK, K.B., London, Chairman.

HON. I. B. LUCAS, M.P.P., Markdale, Commissioner.

W. K. McNAUGHT, C.M.G., Toronto, Commissioner.

W. W. POPE, Secretary.

F. A. GABY, Chief Engineer.

CONTENTS

Section.		Page
I.	Legal Proceedings	1
	A. Acts	1
	B. Right-of-Way	57
	C. Crossings	57
	D. Agreements	58
	E. Inspection	58
	F. Radial Railways	58
II.	Transmission System	60
	A. Steel Tower Transmission Lines	60
	B. Station Equipments and Buildings	62
	C. Low Tension Transmission Lines	91
III.	Operation of the Systems	106
	A. Niagara System	106
	B. St. Lawrence System	111
	C. Port Arthur System	112
	D. Severn System	112
	E. Wasdell's Falls System	114
	F. Capital Cost	115
	G. Provincial Expenditures	117
	H. Balance Sheet	117
IV.	Municipal Work	118
	A. Municipal Advices	118
	B. Municipal Accounts	137
	C. Municipal Electrical Inspection	217
	D. Municipal Rates	220
	E. Municipal Purchases and Sales	228
	F. Rural Power	230
	G. Ornamental Street Lighting	233
	H. Municipal Underground Construction	235
	I. Electric Railway Projects	236
	J. Testing and Research Laboratories	240
V.	Hydraulic Investigation and Construction	247
	A. Measurements of Stream Flow	247
	B. Power and Storage Surveys	248
	C. Power Construction	253
	D. Stream Flow Data	257
Index		463

ILLUSTRATIONS

Eugenia Falls Development ..... *Frontispiece*

FACING PAGE

Diagram of Stations, Niagara System 65

Switching Equipment—Niagara Transformer Station Extension 66

Transformer and Switching Equipment—Niagara Transformer Station 66

Eugenia Falls—Generating Station 68

London Sub-Station—Rotary Converter Equipment 68

Wiring Diagrams 82

Curve Showing Monthly Increases of Power Load—Niagara System 108

Street Lighting Standards—St. Thomas 234

Street Lighting Standards—Renfrew 234

Meter Test Board 242

Photographic Laboratory 242

Photometer—Illuminating Laboratory 244

Development of Series Gas Filled Lamps 244

Curves Showing Oven Characteristics of Electric Stoves 246

Surge Tank, Penstock and Power House—Eugenia Falls 254

Eugenia Falls—Interior of Power House 254

Eugenia Falls—Complete Main Unit 254

Eugenia Falls—Surge Tank 254

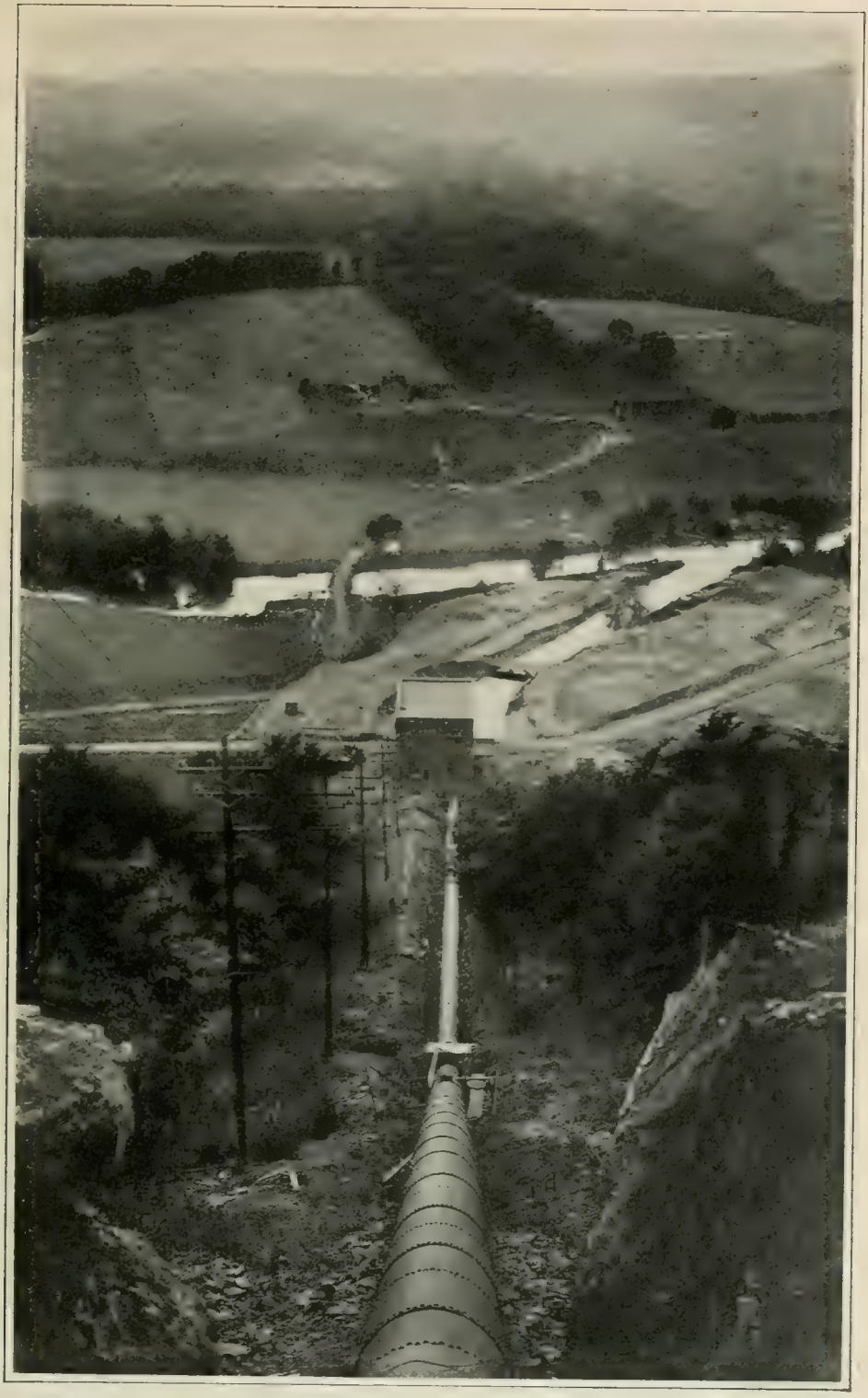
Eugenia Falls—Power House from Tail Race 254

Eugenia Falls—Number 2 Earth Filled Dam 254

Eugenia Falls—Section Number 1 Dam 254

Eugenia Falls—Wood Stave Pipe Line and Surge Tank 254

Eugenia Falls—Main Forebay and Gate House 254



Eugenia Falls—Penstock and Power House From No. 2 Anchor Block

EIGHTH ANNUAL REPORT

OF THE

Hydro-Electric Power Commission

SECTION I

LEGAL PROCEEDINGS

ACTS

The following Act to amend the Hydro-Electric Railway Act of 1914, was passed by the Legislature of the Province of Ontario during the Session of 1915.

This Act was passed to enable part of a Township to bear its proportion of the construction and expense of radial railways, and gives power to purchase existing lines. It also ratifies the contracts entered into by the Hydro-Electric Power Commission with various municipalities for the construction of radial lines and ratifies the by-laws passed by such municipalities.

An Act to amend The Hydro-Electric Railway Act, 1914.

Assented to 8th April, 1915.

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1. This Act may be cited as *The Hydro-Electric Railway Act, 1915.* Short title.

2. *The Hydro-Electric Railway Act, 1914*, is amended by adding thereto the following section:— 4 Geo. V. c. 31.

5*a*. Where an agreement is entered into by the corporation of a township it may provide that the proportion of the cost payable by the corporation shall be borne by the rateable property within a specified district or districts of the township, and in that case, Agreement for construction at expense of portion of township.

(*a*) the agreement and by-law shall define the district or districts by metes and bounds or by lots and concessions; Agreement to describe district.

(*b*) the assent to the by-law of those persons qualified to vote on it in the district or districts shall be sufficient and they shall be the only persons qualified to vote on the by-law; Assent of electors in district.

Rates to be levied in district.

(*c*) the rates imposed for the share of the cost to be borne by the township shall be imposed upon the rateable property within such district or districts only; and

Debentures to be debentures of township.

(*d*) the debentures to be issued and deposited with the Commission shall be a liability of the corporation of the township and any rate required to be levied for payment thereof or for the interest thereon shall be raised, levied and collected upon the whole of the rateable property in the township.

4 Geo. V. c. 31, s. 4, amended.

3. Section 4 of *The Hydro-Electric Railway Act, 1913*, is amended by adding thereto the following subsection:—

Purchasing existing lines.

(6) The agreement may include in its terms the purchase of any existing electric railway or street railway or any part thereof as part of the line of railway to be constructed and operated by the Commission.

Contract with municipal corporations confirmed as amended.

4. The contract entered into by the Hydro-Electric Power Commission of Ontario with the municipal corporations of the townships of Scarborough, Markham, Pickering, Whitby and Reach and of the town of Whitby and of the Villages of Markham, Stouffville and Port Perry, set out in Schedule "A" hereto annexed, is confirmed and declared to be legal, valid and binding upon the Commission and upon each of the said municipal corporations and the ratepayers thereof and to have been made and entered into in due compliance with the provisions of *The Hydro-Electric Railway Act, 1914*, but subject to the following amendments and alterations:—

4 Geo. V. c. 31.

Amendments.

(*a*) The Township of Whitchurch, the Township of Uxbridge, the Town of Newmarket, and the Town of Uxbridge are omitted as parties to the said contract;

(*b*) Schedule "A" to the said contract is amended by striking out the paragraph headed "Unionville—Newmarket Section" and substituting therefor the following:—

"UNIONVILLE-STOUFFVILLE JUNCTION."

"A line will run northerly from Unionville approximately up to the centre of Concession V., Township of Markham, to Markham and Whitchurch township line, designated as Stouffville Junction;"

(*c*) The paragraph in the said schedule headed "Stouffville Junction—Claremont Section" is amended by striking out the words "Newmarket Section" in the first line and substituting "Stouffville Junction" therefor;

(*d*) The said schedule is further amended by striking out the whole of the paragraph headed "Vandorf—Uxbridge" section;

(*e*) Schedule "B" to the said agreement is amended by striking out the words and figures: "Township of Whitchurch, $488,152"; "Township of Uxbridge, $227,901"; "Town of Newmarket, $266,986"; "Town of Uxbridge, $204,665," and by striking out the total at the end of the said schedule, "$4,346,938," and substituting therefor "$3,159,234."

Execution of separate copies of contract to be sufficient.

5. The execution of separate copies of the said contract by each of the said municipal corporations and by the Commission shall be sufficient execution of the said contract and shall be binding upon the parties thereto in the same manner as if the said contract had been executed by the Commission and by all the municipal corporations as to which said contract is declared by section 3 to be confirmed.

By-laws confirmed.

6. By-law Number 877 of the Municipal Corporation of the Township of Scarborough, By-law Number 767 of the Municipal Corporation of the Township of Markham, By-law Number 1031 of the Municipal Corporation of the Township of Pickering, By-law Number 965 of the Municipal Corporation of the Township of Whitby, By-law Number 1317 of the Municipal Corporation of the Township of Reach, By-law Number 877 of the Municipal Corportion of the Town of Whitby, By-law Number 394 of the Municipal Corporation of the Village of Markham, By-law Number 335 of the Municipal Corporation of the Village of Stouffville, and By-law Number 700 of the Municipal Corporation of the Village of Port Perry, being by-laws authorizing the execution of the said contract between the Hydro-Electric Power Commission of Ontario and the said Municipal Corporations, are confirmed and declared to be legal, valid and binding upon the said municipal corporations respectively and the ratepayers thereof and shall not be open to question upon any grounds whatsoever, notwithstanding the requirements of *The Hydro-Electric Railway Act, 1914*, or the amendments thereto, or of any other statute.

Commencement of Act.

7. Sections 1, 2 and 3 shall come into force forthwith, and sections 4, 5 and 6 shall come into force and take effect upon a date to be named by the Lieutenant-Governor in Council by his proclamation.

SCHEDULE "A."

(Section 4).

This indenture made the day of in the year of our Lord, one thousand nine hundred and fourteen,

Between

The Hydro-Electric Power Commission of Ontario (hereinafter called the "Commission") of the first part,

and

The Municipal Corporations of the Township of Scarborough, the Township of Markham, the Township of Whitchurch, the Township of Pickering, the Township of Uxbridge, the Township of Whitby, the Township of Reach, the Town of Newmarket, the Town of Uxbridge, the Town of Whitby, the Village of Markham, the Village of Stouffville and the Village of Port Perry (hereinafter called the "Corporations") of the second part.

Whereas pursuant to *The Hydro-Electric Railway Act*, 1914, the Commission was requested to enquire into, examine, investigate and report upon the cost of construction and operation of an electric railway or railways to be constructed through certain districts in which the corporations are situated, together with the probable revenue that would result from the operation of such railway or railways;

And whereas the Commission has furnished the corporations with such a report showing (1) the total estimated cost, operating revenue and expenses of the railway or railways, and (2) the proportion of the capital cost to be borne by each of the corporations as set forth in Schedule "B" attached hereto;

And whereas on receipt of the said report the corporations requested the Commission to construct, equip and operate a system of electric railways (hereinafter called the railway) over the routes laid down in Schedule "A" attached hereto, upon the terms and conditions and in the manner herein set forth;

And whereas the Commission has agreed with the corporations on behalf of the corporations to construct, equip and operate the railway upon the terms and conditions and in the manner herein set forth; but upon the express condition that the Commission shall not in any way be liable by reason of any error or omission in any estimates, plans or specifications for any financial or other obligation or loss whatsoever by virtue of this agreement or arising out of the performance of the terms thereof;

And whereas the electors of each of the corporations have assented to by-laws authorizing the corporations to enter into this agreement with the Commission for the construction, equipment and operation of the railway as laid down in the said schedules, subject to the following terms and conditions;

And whereas the corporations have each issued debentures for the amounts set forth in schedule "B" attached hereto, and have deposited the said debentures with the Commission;

Now therefore this indenture witnesseth:—

1. In consideration of the premises and of the agreements of the corporations herein contained, and subject to the provisions of the said Act, the Commission agrees with the corporations respectively:—

(*a*) To construct, equip and operate the railway through the districts in which the corporations are situate on behalf of the corporations;

(*b*) To construct and operate the railway over the routes laid down in schedule "A";

(*c*) To issue bonds, as provided in paragraph 3 of this agreement, to cover the cost of constructing and equipping the railway;

(*d*) To furnish as far as possible first-class modern and standard equipment for use on the railway, to operate this equipment so as to give the best service and accommodation possible, having regard to the district served, the type of construction and equipment adopted, and all other equitable conditions, and to exercise all due skill and diligence so as to secure the most effective operation and service of the railway consistent with good management;

(*e*) To regulate and fix the fares and rates of toll to be collected by the railway for all classes of service;

(*f*) To utilize the routes and property of the railway for all purposes from which it is possible to obtain a profit;

(*g*) To combine the property and works of the railway and the power lines of the Commission where such combination is feasible and may prove economical to both the railway and the users of the power lines;

(*h*) To permit and obtain interchange of traffic with other railways wherever possible and profitable.

(*i*) To supply electrical power or energy for operation of the railways at rates consistent with those charged to municipal corporations;

(*j*) To apportion annually the capital costs and operating expenses of all works, apparatus and plant used by the railway in common with the Commission's transmission lines in a fair manner, having regard to the service furnished by the expenditure under consideration;

(*k*) To apply the revenue derived from operation of the railway and any other revenue derived from the undertaking to the payment of operating expenses (including electrical power), the cost of administration, and annual charges for interest and sinking fund on the money invested, and such other deductions as are herein provided for;

(*l*) To set aside from any revenue thereafter remaining an annual sum for the renewal of any works belonging in whole or in part to the undertaking;

(*m*) To pay over annually to the corporations, if deemed advisable by the Commission in the interests of the undertaking, any surplus that may remain after providing for the items above mentioned. The division of such surplus between the corporations to be fixed by the Commission on an equitable basis, having regard in the case of each corporation to the capital invested, the service rendered, the comparative benefits derived, and all other like conditions;

(*n*) To take active steps for the purpose of constructing, equipping and operating the railway at the earliest possible date after the execution of this agreement by the corporations and the deposit of debentures as called for under clause 2 (*b*) hereof and to commence operation of each section as soon as possible after its completion;

(*o*) To make such extensions to the railway described in schedule "A" as may appear advantageous and profitable from time to time.

2. In consideration of the premises and of the agreements herein set forth, each of the corporations for itself, and not one for the other, agrees with the Commission:—

(*a*) To bear its share of the cost of constructing, equipping, operating, maintaining, repairing, renewing and insuring the railway and its property and works as established by the Commission, subject to adjustments and apportionment between the corporations by the Commission from time to time;

(*b*) To issue debentures for the amounts set forth in schedule "B" maturing in fifty years from the date of issue thereof, and payable yearly at the Bank, at Toronto, Ontario. Such debentures shall be deposited with the Commission previous to the issuing of the bonds mentioned above, and may be held or disposed of from time to time by the Commission, as provided for in clause 4 hereof, in such amounts, at such rates of discount or premium, and on such terms and conditions as the Commission in its sole discretion shall deem to be in the interests of the railway, the proceeds of such debentures being used solely for the purposes herein contained. The amount of debentures of each corporation sold or disposed of from time to time shall be such proportion as may be fixed by the Commission of the total amount of debentures, due regard being given to the capital invested, the service rendered, the comparative revenue derived, and all other equitable conditions;

(*c*) To make no agreement or arrangement with and to grant no bonus, license or other inducement to any other railway or transportation company without the written consent of the Commission;

(*d*) To keep, observe and perform the covenants, provisoes and conditions set forth in this agreement intended to be kept and observed and performed by the corporations, and to execute such further or other documents and to pass such by-laws as may be requested by the Commission for the purpose of fully effectuating the objects and intent of this agreement;

(*e*) To furnish a free right of way for the railway and for the power lines of the Commission over any property of the corporations upon being so requested by the Commission, and to execute such conveyance thereof or agreement with regard thereto as may be desired by the Commissioners.

3. It shall be lawful and the Commission is hereby authorized to create or cause to be created an issue of bonds, and to sell or dispose of the same on behalf of the corporations. Such bonds to be charged upon and secured by the railway, and all the assets, rights, privileges, revenues, works, property and effects belonging thereto or held or used in connection with the railway constructed, acquired, operated and maintained by the Commission under this agreement, and to be for the total amounts mentioned in schedule "B" hereto attached; provided that the Commission may, upon obtaining the consent as herein defined of the majority of the corporations, increase the said bond issue by any amount necessary to cover the capital cost of extending the railway, and may also without such consent increase the said bond issue to cover the cost of additional works or equipment of any kind for use on the railway to an extent not exceeding ten per cent. (10%) of the bonds issued from time to time. In order to meet and pay such bonds and interest as the same becomes due and payable the Commission shall in each year after the expiration of ten years from the date of the issue of the bonds out of the revenue of the railway after payments of operating expenses (including electrical power) and the cost of administration set aside a sufficient sum to provide a sinking fund for the purpose of redeeming the same at maturity. Debentures issued by the corporations in compliance with clause (2*b*) hereof, shall, to the extent of the par value of any bonds outstanding from time to time, be held or disposed of by the Commission in trust for the holders of such bonds as collateral security for payment thereof, it being understood and agreed that in the event of any increase of the said bond issue each corporation shall, upon the request of the Commission, deposit with the Commission additional debentures as described in clause 2 (*b*) hereof, to be held or disposed of by the Commission as collateral security for such increase of the said bond issue, and that any debentures held by the Commission in excess of the par value of the outstanding bonds from time to time may be held or disposed of by the Commission to secure payment of any deficit arising from the operation of the railway.

4. In the event of the revenue derived from the operation of the undertaking being insufficient in any year to meet the operating expenses (including electrical power), the cost of administration and the annual charges for interest and sinking fund on the bonds, and for the renewal of any works belonging in whole or in part to the railway, such deficit shall be paid to the Commission by the corporations upon demand of and in the proportion adjusted by the Commission. In the event of the failure of any corporation to pay its share of such a deficit as adjusted by the Commission, it shall be lawful for the Commission in the manner provided in clause 2 (*b*) to dispose of debentures held by the Commission as security for any such deficit. Any arrears by any corporation shall bear interest at the legal rate.

5. Should any corporation fail to perform any of the obligations to the Commission under this agreement, the Commission may, in addition to all other remedies and without notice, discontinue the service of the railway to such corporation in default until the said obligation has been fulfilled, and no such discontinuance of service shall relieve the corporation in default from the performance of the covenants, provisoes and conditions herein contained.

6. In case the Commission shall at any time or times be prevented from operating the railway or any part thereof by strike, lock-out, riot, fire, invasion, explosion, act of God, or the King's enemies, or any other cause reasonably beyond its control, then the Commission shall not be bound to operate the railway or such part thereof during such time; but the corporations shall not be relieved from liability or payment under this agreement, and as soon as the cause of such interruption is removed the Commission shall, without any delay, continue full operation of the railway, and each of the corporations shall be prompt and diligent in doing everything in its power to remove and overcome any such cause or causes of interruption.

7. It shall be lawful for, and the corporations hereby authorize the Commission to unite the business of the railway with that of any other railway system operated in whole or in part by the Commission, and to exchange equipment and operators from one system to the other, proper provision being made so that each system shall pay its proportionate share of the cost of any equipment used in common.

8. If at any time any other municipal corporation applies to the Commission for an extension of the railway into its municipality the Commission shall notify the applicant and the corporations, in writing, of a time and place to hear all representations that may be made as to the terms and conditions relating to such proposed extension. If, on the recommendation of the Commission, such extension shall be authorized, without discrimination in favor of the applicant, as to the cost incurred or to be incurred for or by reason of any such extension, the Commission may extend the railway upon such terms and conditions as may appear equitable to the Commission.

No such application for an extension of the railway into any municipality the corporation of which is not a party to this agreement shall be granted if it is estimated by the Commission that the cost of service of the railway to the corporations parties hereto will be thereby increased or the revenue and accommodation be injuriously affected without the written consent of the majority of the corporations parties hereto.

9. The consent of any corporation required under this agreement shall mean the consent of the council of such corporations, such consent being in the form of a municipal by-law duly passed by the council of the corporation.

10. The Commission shall at least annually, adjust and apportion between the corporations the cost of construction, equipment, operation, interest, sinking fund, and also the cost of renewing the property of the railway.

11. Every railway and all the works, property and effects held and used in connection therewith, constructed, acquired, operated and maintained by the Commission under this agreement and the said Act shall be vested in the Commission on behalf of the corporations; but the Commission shall be entitled to a lien upon the same for all money expended by the Commission under this agreement and not repaid.

12. Each of the corporations covenants and agrees with the other:—

(*a*) To carry out the agreements and provisions herein contained;

(*b*) To co-operate by all means in its power at all times with the Commission to create the most favorable conditions for the carrying out of the objects of this agreement and of the said Act, and to increase the revenue of the railway and ensure its success.

13. In the event of any difference between the corporations the Commission may, upon application, fix a time and place to hear all representations that may be made by the parties, and the Commission shall adjust such differences, and such adjustments shall be final. The Commission shall have all the powers that may be conferred upon a commissioner appointed under the *Act Respecting Enquiries Concerning Public Matters.*

14. This agreement shall continue and extend for a period of fifty years from the date hereof, and at the expiration thereof be subject to renewal with the consent of the corporations from time to time for like periods of fifty years, subject to adjustment and re-apportionment as herein provided for the purposes of this agreement as though the terms hereof had not expired. At the expiration of this agreement the Commission shall determine and adjust the rights of the corporations, having regard to the amounts paid or assumed by them respectively under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

15. This agreement shall not come into effect until it has been sanctioned by the Lieutenant-Governor in Council.

In witness whereof the Commission and the corporations have respectively affixed their corporate seals and the hands of their proper officers.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck, *Chairman.*
I. B. Lucas.
W. K. McNaught.

(L.S.)

THE CORPORATION OF THE TOWNSHIP OF SCARBOROUGH.

J. G. Connell, *Reeve.*
W. D. Annis, *Clerk (pro tem).*

(L.S.)

THE CORPORATION OF THE TOWNSHIP OF MARKHAM.

John Nigh, *Reeve.*
C. H. Stiver, *Clerk.*

(L.S.)

THE CORPORATION OF THE TOWNSHIP OF PICKERING.

William W. Sparks, *Reeve.*
D. R. Beaton, *Clerk.*

(L.S.)

THE CORPORATION OF THE TOWNSHIP OF WHITBY.

JOHN J. MOORE, *Reeve.*
(L.S.) D. HOLLIDAY, *Clerk.*

THE CORPORATION OF THE TOWNSHIP OF REACH.

RALPH MCINTYRE, *Reeve.*
(L.S.) WM. T. DOBSON, *Clerk.*

THE CORPORATION OF THE TOWN OF WHITBY.

JOHN E. MILLER, *Mayor.*
(L.S.) JOSEPH WHITE, *Clerk.*

THE CORPORATION OF THE VILLAGE OF MARKHAM.

R. FLEMING, *Reeve.*
(L.S.) N. WHITE, *Clerk.*

THE CORPORATION OF THE TOWNSHIP OF STOUFFVILLE.

W. A. SANGSTER, *Reeve.*
(L.S.) JOHN URQUHART, *Clerk.*

THE CORPORATION OF THE VILLAGE OF PORT PERRY.

GEORGE GEROW, *Reeve.*
WM. H. HARRISS, *Clerk.*
(L.S.)

SCHEDULE "A."

ROUTES.

Toronto—Unionville Section.

From the eastern limits of the City of Toronto, Victoria Park Avenue, line will parallel the Canadian Northern Railway on the south side to Pharmacy Avenue, thence take a direct route to the south-east corner of lot 29, con. C, Township of Scarborough. Crossing the Kennedy Road, line will run northerly about the centre of lot 28, as far as con. 1, Township of Scarborough, from which point approximately parallel to the Grand Trunk Railway to Unionville.

Unionville—Brooklin Section.

The line will cross the Grand Trunk Railway on road allowance between lots 10 and 11, con, V, Township of Markham, and run on this to con. VI, at which point line will cross to lot 11 and parallel the road to the neighborhood of Markham Village, where it will turn northerly and cross con. VIII road south of Grand Trunk Railway; continuing easterly line will run through Locust Hill along or parallel with road allowance between lots 10 and 11. From the Markham-Pickering Township line, line will cross to the centre of con. VI, Township of Pickering, and continue approximately through the centre of the concession to Brooklin, excepting near Greenwood, where the line will be diverted.

Unionville—Newmarket Section.

The line will run northerly from Unionville approximately up the centre of con. V, Township of Markham, and of con. V, Township of Whitchurch, to or near lot 5, thence to centre of concession IV, Township of Whitchurch, to or near lot 27, and thence north-westerly to Newmarket.

Stouffville Junction—Claremont Section.

At a point on Unionville-Newmarket section at Markham-Whitchurch Township line, designated Stouffville Junction, line will run easterly a short distance south of the Township line, through Stouffville to the Markham-Pickering Township line and thence through the middle of concession IX, Township of Pickering, to Claremont.

Vandorf—Uxbridge Section.

From Vandorf on the Unionville-Newmarket section, line will run near road allowance between lots 15 and 16, Township of Whitchurch, to the north side of Musselman's Lake; thence north-easterly to a point about ¼ mile south of Siloam and thence due east to Uxbridge, paralleling the road allowance ¼ mile to the south.

Whitby Section.

Line will leave Port Perry in the Neighborhood of the Fair Grounds and run direct to Manchester P.O., thence south to meet the Grand Trunk Railway near Highpoint. Line will continue southerly a short distance west of the Grand Trunk Railway, passing about ½ mile east of Ashburn and thence through lot 24 in the Township of Whitby to Brooklin.

From Brooklin the line will run parallel to the road allowance between lots 28 and 29, Township of Whitby, as far south as the Canadian Pacific Railway, in the Town of Whitby. The line will then be diverted to Henry Street and thence to the lake front.

SCHEDULE "B."

Name of Municipal Corporation.	Total amount of debentures to be issued by the respective municipalities and deposited with the Commission under Clause 2 (*b*).
Township of Scarborough	$565,714 00
Township of Markham	803,939 00
Township of Whitchurch	488,152 00
Township of Pickering	578,115 00
Township of Uxbridge	227,901 00
Township of Whitby	554,619 00
Township of Reach	235,722 00
Village of Markham	48,762 00
Village of Stouffville	75,281 00
Village of Port Perry	113,308 00
Town of Newmarket	266,986 00
Town of Uxbridge	204,665 00
Town of Whitby	183,774 00
Total amount of bonds to be issued, mentioned in Clause 3	$4,346,938 00

The following Act was also passed at the last session of the Legislature to validate certain by-laws passed and contracts entered into with the various municipalities, giving the Commission additional powers for acquiring easements, and making further regulations as to wiring, equipment, etc.

The Power Commission Act, 1915

AN Act to amend The Power Commission Act.

Assented to 8th April, 1915.

HIS MAJESTY, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

Short title.

1. This Act may be cited as *The Power Commission Act, 1915.*

Rev. Stat. c. 39, s. 5, repealed.

2. Section 5 of *The Power Commission Act* is repealed and the following substituted therefor:—

Salary of chairman.

5.—(1) The Chairman of the Commission shall be paid an annual salary of $6,000 per annum, and the same shall be a charge upon and payable out of the Consolidated Revenue Fund of Ontario.

Other remuneration of commissioners.

(2) The Chairman and each of the other members of the Commission may be paid such annual sum for their services as members of the Commission as may be determined by the Lieutenant-Governor in Council, out of moneys to be provided as set out in clause *c* to section 23 of this Act, as amended by section 4 of *The Power Commission Act, 1914.*

Seat of member who is a member of Assembly not vacated nor penalties incurred.

(3) Notwithstanding anything contained in *The Legislative Assembly Act* the election of the chairman or of any other member of the Commission if a member of the Assembly, shall not by reason of the payment to him of any salary or other remuneration under this Act, or the acceptance thereof be avoided, nor shall he vacate or forfeit his seat or incur any of the penalties imposed by that Act for sitting and voting as a member of the Assembly.

Commencement of sub-section 2.

(*a*) Subsection 2 and this subsection shall take effect as from the 1st day November, 1914, and shall apply to the services of any member of the Commission since that date.

Rev. Stat. c. 39, s. 8 (b), repealed.

3. Clause (*b*) of section 8 of *The Power Commission Act* is repealed.

4. Section 9 of *The Power Commission Act* is amended by striking out all the words therein down to and including the word "thereof" in the fourth line and inserting in lieu thereof the words "Subject to the provisions of sections 10 and 10*a* whenever the Commission is authorized by the Lieutenant-Governor in Council to exercise any of the compulsory powers mentioned in section 8, or which are conferred upon the Commission by any other provision, the Commission in respect thereof." Rev. Stat. c. 39, s. 9, amended. Exercise of powers of expropriation.

5. Subsections 1 and 2 of section 10 of *The Power Commission Act* are repealed and the following substituted therefor:— Rev. Stat. c. 39, s. 10, subs. 1 and 2, repealed.

(1) Whenever the Commission has been authorized by the Lieutenant-Governor in Council to exercise any of the powers set out in clause *c* of section 8 the Commission may acquire by purchase, lease or otherwise, or without the consent of the owners thereof or other persons interested therein, enter upon, take possession of, expropriate, and use such lands and such rights or easements, in lands as may be required for the purpose of constructing, erecting, maintaining, and operating thereon lines of wires, poles, conduits or other conductors or devices, with all other plant, appliances and equipment required therefor to transmit, distribute, supply or furnish electricity at such voltage as the Commission may determine, through, over, under, along or across any lands and premises, public highways or public places, streams, waters, watercourses, or any bridge, viaduct or railway. Powers as to taking or acquiring lands, easements, etc.

(2) The powers mentioned in subsection 1 may be exercised without any prerequisite or preliminary action or proceeding and without any other sanction or authority than is conferred by this Act, and shall include the right to take, acquire or retain possession for such time as the Commission may deem proper, and under agreement with the owner or person interested, or without his consent, of such lands or of such estate, right, title, privilege, easement or interest in, over, upon, or in respect of or relating to any land as to the Commission may seem desirable or expedient. Mode of exercising powers and extent of powers.

(2*a*) Whenever the Commission acts or has acted under the authority conferred by subsection 1, compensation shall be made to the owners or persons interested for the lands taken and for all damage to land necessarily resulting from the exercise of the powers granted to the Commission by that subsection, and in fixing such compensation regard shall in all cases be had to the value of the lands taken or to the nature and extent of the estate, right, privilege, easement or interest which the Commission decides to take and acquire in, over, upon or in respect of the lands, as the case may be, and the compensation shall be based thereon. Compensation.

Section 5 to be retroactive.

6. The amendment made by the last preceding section shall be deemed to have been in force and shall take effect as from the first day of March, 1914.

Rev. Stat. c. 39, s. 8, cl. c, amended.

7. Clause (*c*) of section 8 of *The Power Commission Act* is amended by striking out all the words therein after the word "person" in the eighteenth line.

Rev. Stat. c. 39, amended.

8. *The Power Commission Act* is amended by inserting therein the following as section 10*a*:—

Removal of trees and obstructions beside right of way.

10*a*. For greater certainty, but not so as to restrict the general powers conferred upon the Commission by or under the authority of this Act, it is declared that such powers shall include the right to enter upon any land upon either side of the right-of-way acquired for the transmission or distribution lines or works of the Commission, or upon any land upon either side of such lines or works, and to fell or remove any trees or any branches of a tree or any other obstruction upon any such land or upon any public highway or place which, in the opinion of the Commission, it is necessary to fell or remove, but subject always to the payment of compensation as provided in section 10 of this Act, and the said section shall apply to the exercise of the powers mentioned in this section.

Sections 7 and 8 retroactive.

9. The amendments made by the last two preceding sections shall be deemed to have been in force and shall take effect as from the first day of March, 1914.

Rev. Stat. c. 39, amended.

10. *The Power Commission Act* is amended by adding thereto the following section:—

Selling lands no longer required.

10*b*. The Commission may sell and dispose of any part of the lands purchased or acquired under the provisions of this Act which may be found unnecessary for the purposes of the Commission.

Rev. Stat. c. 39, s. 23, 4 Geo. V, c. 16, s. 4, amended.

11.—(1) The clause lettered *c* in section 23 of *The Power Commission Act* as amended by section 4 of *The Power Commission Amendment Act, 1914*, is amended by adding at the end thereof the words "and such sum as the Lieutenant Governor in Council may direct to cover the difference between the four per cent. interest charged on the money so expended on capital account and all charges and expenses of providing such money."

Interest charges.

Commencement of section.

(2) The amendment made by subsection 1 shall take effect as from the 31st day of October, 1914, and as to any money so provided since the said date.

12.—(1) Section 37 of *The Power Commission Act* as amended by sections 6 and 7 of *The Power Commission Act, 1914,* is repealed and the following substituted therefor:— Rev. Stat. c. 39, s. 37, and 4 Geo. V. c. 16, ss. 6, 7, repealed.

Regulations as to equipment.

37.—(1) The Commission may make regulations as to the construction, operation, and inspection of the works, plant, machinery, apparatus, appliances, devices, material and equipment for the transmission, distribution, connection, installation and use of electrical power or energy by municipal corporations, and by any railway, street railway, electric lighting, power or transmission company, or by any other company, firm or individual transmitting, distributing, installing or using electrical power or energy or whose undertaking, works or premises are connected with any plant for transmission or distribution of electrical power or energy, and the Commission may impose penalties for the breach of any such regulations.

Ordering changes in equipment, etc.

(2) The Commission may at any time order the installation, removal or alteration of any works, plant, machinery, apparatus, appliances, devices, material or equipment as in the opinion of the Commission may be necessary for the safety of the public or of workmen or for the protection of property against damage by fire or otherwise.

Inspection.

(3) The Commission may appoint inspectors for the purpose of seeing that the regulations and orders of the Commission made under the authority of this section or of any provision of this Act are carried out, may fix and collect the fees to be paid by any corporation, company, firm, or individual upon any inspection made under the regulations or by order of the Commission, and may provide for the payment of the remuneration, travelling and other expenses of the inspector out of the fees so collected or out of the funds appropriated for carrying on the work of the Commission.

Where inspectors already appointed.

(2) Where prior to the passing of this Act an inspector has been appointed under section 37 of *The Power Commission Act* and the amendments thereto for any municipality or for two or more municipalities, such inspector shall remain in office and shall continue to perform the duties imposed upon him by the regulations of the Commission until a direction in writing has been given by the Commission to the clerk of the municipality or the clerks of the municipalities for which the inspector was appointed that he shall cease to act as such inspector and shall account for and hand over to the municipal corporation or corporations by or for which he was appointed all fees, books, accounts, and documents in his possession as such inspector.

By-laws as to inspection to cease to have effect.

(3) Upon direction being given by the Commission as provided in subsection 2, every by-law providing for the appointment of an inspector or inspectors for the municipality or municipalities and defining the

qualification and duties of such inspector or inspectors shall be deemed to be repealed and of no further force or effect.

Rev. Stat. c. 39, s. 39, amended.

13. Section 39 of *The Power Commission Act* is amended by adding thereto the following clause:—

Application of surplus receipts.

(*e*) To the extent to which such surplus is derived from the supply of electrical power or energy for the public buildings of the corporation or the lighting of the streets of the municipality or for the operation of any street railway or electric railway or any public utility owned and operated by the corporation,—by payment over of such surplus or of such portion thereof as the said Commission may deem proper to the treasurer of the municipality to be applied to the general purposes of the corporation.

Rev. Stat. c. 39, s. 39, amended.

14.—(1) Section 39 of *The Power Commission Act* is amended by adding thereto the following subsections:—

Application of section notwithstanding special provisions.

(2) It is declared that subsection 1 shall apply to every municipal corporation or municipal commission which has entered into a contract with the Commission for the supply of electrical power or energy, notwithstanding any provision to the contrary or any inconsistent provision in any general or special Act heretofore passed.

Liability for misapplication of surplus receipts.

(3) Any member of the council of a municipal corporation or a municipal commission who is in any manner a party to any other disposition of such surplus than that directed by the Commission shall forfeit his office, and proceedings may thereupon be taken against him as provided in *The Municipal Act* in the case of a member of a municipal council who has become disqualified.

Disqualification.

(4) If it is found upon such proceedings that such member of the municipal council or commission has forfeited his office, he shall be disqualified from holding any municipal office for a period of two years thereafter.

Commencement of section.

(2) This section shall come into force on the 1st day of January, 1916.

Rev. Stat. c. 39, amended.

15. *The Power Commission Act* is amended by adding thereto the following sections:—

Commission to be established in every city, or town, under contract with commission.

47. Notwithstanding anything in any general or special Act contained, in and for the year 1916 and thereafter subsection 5 of section 34 of *The Public Utilities Act* shall apply in every city and town which has entered into a contract with the Commission for the supply of electrical power or energy,

and a Commission shall be established under the provisions of Part III of *The Public Utilities Act* for the control and management of the construction, operation and maintenance of all works undertaken by the corporation for the distribution and supply of electrical power or energy. Rev. Stat c. 204.

(2) In a city having a population of 100,000 or over according to the last enumeration of the assessor, the corporation of which has entered into a contract with the Commission under this Act, the Commission to be established for the control and management of the construction, operation and maintenance of all works undertaken by the corporation for the distribution and supply of electrical power or energy may, if the council of the city by by-law so declares, consist of three members, one of whom shall be appointed by the municipal council of the city at its first meeting in each year, one shall be appointed by the Commission and the third of whom shall be the mayor of the city, and the members so appointed shall hold office for two years or until their successors are appointed. Commission —how composed in city of 100,000 or over.

48.—(1) No member or officer of any Commission appointed or elected for the control and management of the construction, operation and maintenance of works undertaken by a municipal corporation for the distribution and supply of electrical power or energy received from the Commission shall, directly or indirectly Members of commission not to be interested in certain companies, etc.

(*a*) Hold, purchase, take or become interested in any stock, share, bond, debenture or other security or property of any company or individual engaged in the generation, distribution or supply of electrical power or energy in the municipality or holding or controlling works for that purpose; or

(*b*) Have any interest in any device, appliance, machine, patented process or article, or any part thereof, which may be required or used as part of the equipment required in the generation, distribution or supplying of electrical power or energy.

(2) If any such stock, share, bond, debenture or other security, property, device, appliance, machine, patented process or article, or any part thereof or any interest therein, shall come to or vest in any member or officer of a municipal commission by will or succession for his own benefit, he shall, within three calendar months after the same shall so come to or vest in him, absolutely sell and dispose of the same or his interest therein. Commissioner to part with any such property devolving on him.

Not to be directors or officers of certain companies

(3) No member or officer of any such municipal Commission shall act as director or officer of any company which has power to invest any portion of its funds in the securities of a company generating, distributing or supplying electrical power or energy or any appliance therefor in the same municipality.

Right to enter on lands to put up wires, etc.

49. To remove doubts it is declared that a municipal corporation which has entered into a contract for the supply of electrical power or energy by the Commission, may by its officers, agents, servants and workmen enter into and upon the lands of any person, including lanes, courts, yards and buildings, for the purpose of placing overhead or underground wires with their appurtenances without the consent of the owner or occupant of such property, but subject to the payment of compensation for any damage caused thereby, to be determined in the manner provided by *The Municipal Act* where a municipal corporation enters upon and takes land for the purposes of the corporation, but leave of a judge or payment into court shall not be necessary before the exercise of the powers in this section declared to be vested in the municipal corporation.

Rev. Stat. c. 192.

Agreements to extend to commissions, boards, etc.

50. Where by this Act or by any contract heretofore or hereafter entered into between the Commission and a municipal corporation, duties are imposed upon or covenants or undertakings are entered into by the municipal corporation, the same shall extend to and be deemed to include and shall be binding upon any Commission having the management or control of any public utility or other municipal undertaking for and on behalf of the municipal corporation, and any board of education, board of high school trustees or board of public school trustees appointed or elected for the municipality represented by the municipal corporation.

Enforcement of agreements with corporations.

51. Notwithstanding any provision contained in the contract or agreement entered into between a municipal corporation and the Commission providing for the determination of questions arising under the contract or agreement, or for the settlement of any dispute between the municipal corporation and the Commission by the Lieutenant-Governor in Council or in any other manner, the Commission may bring an action for any breach of the contract or agreement on the part of the municipal corporation, and the Court may in any such action grant an injunction restraining the municipal corporation from doing any act or continuing any such breach, may order the municipal corporation to supply any omission or to do any act required to be done by the corporation under the terms of the contract or agreement, and may award to the Commission such sum as damages for any such breach as the Court may consider a fitting penalty to impose upon the municipal corporation therefor.

Certain corporations added as parties to contract with Commission.

16. The municipal corporation of the Town of Clinton, the municipal corporation of the Town of Simcoe, the municipal corporation of the Town of Sandwich, the municipal corporation of the Town of Wallaceburg, the municipal corporation of the Town of Dresden, the municipal corporation of the Town of Tilbury, the municipal corporation of the Village of Lucan, the municipal corporation of the Village of Woodbridge, the municipal corporation of the Village of Bolton, the municipal corporation of the Village of Streetsville, the municipal corporation of the Village of Ayr, the municipal corporation of the Village of Drumbo, the municipal corporation of the Village of Waterford, the municipal corporation of the Police Village of Princeton, the municipal corporation of the Police Village of Plattsville, the municipal corporation of the Police Village of Mount Brydges, the municipal corporation of the Police Village of Burford are added as parties of the second part to the contract set out in Schedule "A" to *The Power Commission Act, 1909*, as varied, confirmed and amended by the said Act, and as further varied, confirmed and amended by the Act passed in the tenth year of the reign of His late Majesty King Edward VII, chaptered 16, and by subsequent Acts and by this Act, and the said contract shall be binding upon the parties thereto, respectively, as to the Town of Clinton, from the 7th day of April, 1913; as to the Town of Simcoe, from the 1st day of November, 1914; as to the Town of Sandwich, from the 18th day of February, 1915; as to the Town of Wallaceburg, from the 30th day of June, 1914; as to the Town of Dresden, from the 14th day of September, 1914; as to the Town of Tilbury, from the 1st day of July, 1914; as to the Village of Lucan, from the 1st day of July, 1914; as to the Village of Woodbridge, from the 7th day of May, 1914; as to the Village of Bolton, from the 7th day of December, 1914; as to the Village of Streetsville, from the 1st day of May, 1914; as to the Village of Ayr, from the 1st day of September, 1914; as to the Village of Drumbo, from the 1st day of April, 1914; as to the Village of Waterford, from the 8th day of September, 1914; as to the Police Village of Princeton, from the 12th day of March, 1914; as to the Police Village of Plattsville, from the 18th day of March, 1913; as to the Police Village of Mount Brydges, from the 15th day of January, 1915; as to the Police Village of Burford, from the 14th day of November, 1914.

Time from which contract to be binding on corporations added.

Amendment of Schedule to contract.

17. The names of the said municipal corporations are added to Schedule "B" of the said contract, and such schedule shall be read as containing the particulars set out in Schedule "A" to this Act.

Certain other contracts confirmed.

18. The contracts set out as Schedules "A," "B," "C," "D," "E," and "F" hereto between the Hydro-Electric Power Commission of Ontario and the corporations of the City of St. Catharines, the Police Village of Brechin, the Village of Creemore, the Police Village of Williamsburg, the Township of Grantham, and the Township of Tay are hereby confirmed and declared to be legal, valid and binding upon the parties thereto respectively, and shall not be open to question upon any grounds whatsoever, notwithstanding the requirements of *The Power Commission Act*, or the amendments thereto or any other statute.

Rev. Stat. c. 39.

By-laws confirmed.

19. By-laws Nos. 2,592 and 2,593 of the corporation of the City of St. Catharines; By-laws Nos. 1,251 and 1,280 of the corporation of the City of Brantford; By-laws Nos. 301 and 998 of the corporation of the City of Chatham; By-laws Nos. 14 and 13 of the corporation of the Town of Clinton; By-laws Nos. 631 and 641 of the corporation of the Town of Simcoe; By-law No. 524 of the corporation of the Town of Sandwich; By-laws Nos. 338, 361 (*a*) and 419 of the corporation of the Town of Wallaceburg; By-laws Nos. 352 and 420 of the corporation of the Town of Dresden; By-laws Nos. 68 and 66 of the corporation of the Town of Tilbury; By-law No. B841 of the corporation of the Town of Brockville; By-law No. 360 of the corporation of the Town of Huntsville; By-laws Nos. 10 and 9 of the corporation of the Village of Lucan, but subject to the provisions of section 21; By-laws Nos. 316 and 318 of the corporation of the Village of Woodbridge; By-laws Nos. 493 and 494 of the corporation of the Village of Bolton; By-laws Nos. 222 and 226 of the corporation of the Village of Ayr; By-laws Nos. 500 and 501 of the corporation of the Village of Streetsville; By-laws Nos. 513 and 586 of the corporation of the Village of Drumbo; By-laws Nos. 172 and 164 of the corporation of the Village of Waterford; By-laws Nos. 248 and 249 of the corporation of the Village of Creemore; By-laws Nos. 542 and 532 of the corporation of the Township of Caradoc; By-laws Nos. 815 and 830 of the corporation of the Township of Burford; By-laws Nos. 9 and 719 of the corporation of the Township of Williamsburg; By-laws Nos. 467 and 470 of the corporation of the Township of Brechin; By-laws Nos. 658 and 657 of the corporation of the Township of Delaware; By-laws Nos. 722, 723 and 724 of the corporation of the Township of Westminster; By-laws Nos. 239 and 250 of the corporation of the Township of Tilbury West; By-law No. 262 of the corporation of the Township of Grantham; By-law No. 597 of the corporation of the Township of Tay; By-laws Nos. 558, 572, 574, 587 and 588 of the corporation of the Township of Blenheim, are confirmed and declared to be legal, valid and binding upon such corporations and the ratepayers thereof, respectively, and shall not be open to question upon any ground whatsoever, notwithstanding the requirements of *The Power Commission Act,* or the amendments thereto or of any other statute.

By-law of Township of Artemesia confirmed.

20. By-law No. 788 of the Township of Artemesia, in the County of Grey, in the Province of Ontario, set out in Schedule II, to close portions of certain road allowances in the said township, is confirmed and declared to be legal, valid for all purposes and binding upon the corporation of the township and the ratepayers thereof, anything in any general or special Act, or in any by-law or agreement, to the contrary notwithstanding.

Claims for compensation against Township of Artemesia.

21. The corporation of the Township of Artemesia shall not be liable for the payment of any damages or compensation to any person with respect to the closing of such road allowances, but every such claim shall be and may be enforced against the Hydro-Electric Power Commission of Ontario in the same manner and to the same extent as in the case of a like claim against a municipal corporation under *The Municipal Act,*

Rev. Stat. c. 192

and the provisions of that Act as to the determination of such claim shall *mutatis mutandis* apply.

By-law of Village of Lucan may be amended

22. Notwithstanding the confirmation of By-law No. 9 for 1914 of the corporation of the Village of Lucan by section 18, the municipal corporation of the Village of Lucan may amend said by-law by increasing the rate of interest which may be paid upon the debentures to be issued thereunder from four and one-half per cent. to five and one-half per cent. and by making such other amendments to the said by-law as may be necessary to effect such change, but it shall not be necessary to submit for the assent of the electors any such amending by-law or to re-submit By-law No. 9 of 1914 as so amended or to observe any other of the formalities prescribed in *The Municipal Act* in the case of money by-laws and the debentures issued thereunder.

SCHEDULE "A."

Additions to Schedule "B" to the contract set out in Schedule "A" to 9 Edw. VII., c. 19.

Name of Municipal Corporation.	Quantity of power applied for in h.p.	Maximum price of power at Niagara Falls.	No. of volts.	Estimate maximum cost of power ready for distribution in municipality.	Estimate proportionate part of cost to construct transmission line, transformer stations and works for nominally 30,000 h.p., with total capacity of 60,000 h.p.	Estimate of proportionate part of line loss and of part cost to operate, maintain, repair, renew and insure transmission line, transformer stations and works for nominally 30,000 h.p. with total capacity of 60,000 h.p.
Clinton	300	.....	....	$41 00	$94,740 00	$4,105 00
Lucan	100	.....	....	47 74	35,132 00	1,836 00
Woodbridge	100	.....	....	33 83	21,807 00	1,218 00
Bolton	250	.....	....	43 00	75,623 00	4,114 00
Streetsville	200	.....	....	26 00	26,926 00	1,800 00
Ayr	100	.....	....	37 40	24,661 00	1,410 00
Drumbo	25	.....	....	40 73	6,855 75	395 50
Princeton	25	.....	....	65 95	12,530 75	697 00
Plattsville	100	.....	....	49 27	35,083 00	1,992 00
Mount Brydges	25	.....	....	46 56	8,704 00	434 17
Simcoe	200	.....	....	35 00	50,194 00	3,193 00
Waterford	150	.....	....	39 00	39,140 00	3,230 00
Burford	50	.....	....	37 50	12,251 00	714 00
Sandwich	200	.....	....	.....	.....	.....
Wallaceburg	500	.....	....	38 45	135,205 00	6,883 00
Dresden	200	.....	....	43 00	73,902 00	3,844 00
Tilbury	200	.....	....	39 45	84,238 00	4,244 00

SCHEDULE "B."

This indenture made (in duplicate) this first day of December, in the year of our Lord one thousand nine hundred and thirteen.

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called the "Commission," party of the first part;

and

The Municipal Corporation of the City of St. Catharines, hereinafter called the "Corporation," party of the second part.

Whereas pursuant to an Act to provide for the transmission of electrical power to municipalities the Corporation applied to the Commission for a supply of power and the electors of the Corporation assented to a by-law authorizing the Corporation to enter into a contract with the Commission for such power;

1. Now therefore this indenture witnesseth that in consideration of the premises and of the agreements of the Corporation set forth, subject to the provisions of said Act and amendments and of the said contract, the Commission agrees with the Corporation:—

(*a*) To reserve and deliver at the earliest possible date 2,000 h.p. of electrical power to the Corporation.

(*b*) At the expiration of thirty (30) days' notice in writing, which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation additional electrical power when called for in blocks of 100 h.p. each.

(*c*) To use at all times first class, modern, standard, commercial apparatus and plant, and to exercise due skill and diligence so as to secure the most perfect operation of the plant and apparatus of the Corporation.

(*d*) Power shall be delivered to the Corporation at approximately 26,400 or 12,000 volts.

2. In consideration of the premises and of the covenants and agreements herein set forth, the Corporation agrees with the Commission:—

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement, so as to be able to give notice as specified in paragraph 1 (*a*).

(*b*) Subject to the provisions of paragraph 2 (*h*) herein to pay the Commission the cost price per h.p. per annum to the Commission for all power taken.

(*c*) Further to pay annually interest at the rate of four per cent. (4%) per annum on moneys expended, if any, by the Commission on capital account for the construction of necessary works, if any, required to supply said power for the said Corporation.

(*d*) Also to pay an annual part of the cost of construction of the said works so as to form in 30 years a sinking fund for the retirement of any securities issued by the Province of Ontario in connection herewith.

(*e*) To pay any cost of operating, maintaining, repairing, renewing and insuring the said works.

(*f*) The amounts payable in accordance with clauses 2 (*b*) and (*e*) shall be paid in twelve monthly payments, in gold coin of the present standard of weight and fineness at the office of the Commission at Toronto, and bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation, on or before the 15th day of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*g*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*h*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for it as herein provided, whether it takes the same or not. When the greatest amount of power taken for any twenty consecutive minutes during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

If the Corporation during any month takes more than the amount of power ordered and held in reserve for it for twenty consecutive minutes, the Corporation shall pay for this greater amount of power during the entire month. The taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for and on the part of the Commission to hold in reserve an additional block of power in accordance with the terms and conditions of this contract.

When the power factor of the greatest amount of power taken for said twenty consecutive minutes falls below 90 per cent. the Corporation shall pay for 90 per cent. of said power divided by the power factor.

(*i*) To use at all times first class, modern, standard commercial apparatus and plant to be approved by the Commission.

(*j*) To exercise all due skill and diligence as to secure the most perfect operation of the plant and apparatus of the Commission and the Corporation.

3. This agreement shall remain in force for thirty years from the date thereof.

4. (*a*) The power so taken shall be measured at the 12,000 or 24,000 volt side of the step-down transformers in the sub-station in the Corporation by graphic recording curve drawing meters, subject to test as to accuracy by either party hereto.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the sub-station in the limits of the Corporation shall constitute the supply of all power involved herein and the fulfillment of all operating obligations hereunder; and when voltage and frequency are so maintained, the amount of the power, its fluctuations, load factor, power factor, distribution as to phases, and all other electric characteristics and qualities are under the sole control of the Corporation, their agents, customers, apparatus, appliances and circuits.

5. The engineers of the Commission or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant and property of the Corporation and take records at all reasonable hours.

6. In case the Commission should at any time or times be prevented from supplying said power, or any part thereof, or in case the Corporation shall at any time be prevented from taking said power, or any part thereof, by strike, lock-out, fire, invasion, explosion, act of God, or the King's enemies, or any other cause reasonably beyond their control, then the Commission shall not be bound to deliver such power during such times, and the Corporation shall not be bound to pay the price of said power during such time, but as soon as the cause of such interruption is removed, the Commission shall without any delay supply said power as aforesaid, and the Corporation shall take the same and shall be prompt and diligent in removing and overcoming such cause or causes of interruption.

7. If, and so often as, any interruption shall occur in the service of the Company due to any cause or causes, other than those provided for by the next preceding paragraph hereof, the Commission shall recover and pay to the Corporation as liquidated and ascertained damages and not by way of penalty, as follows:—

For any interruption less than one hour double the amount payable for power which should have been supplied during the time of such interruption; and for any interruption of one hour or more, the amount payable for the power which should have been supplied during the time of such interruption and twelve times the last mentioned amount in addition thereto, and all moneys payable under this paragraph when the amount thereof is settled between the Commission and the Company, may be deducted from any moneys payable by the Corporation to the Commission, but such right of deduction shall not in any case delay the said monthly payments.

8. The Commission shall at least annually adjust and apportion the amounts payable by municipal corporations for such power and such interest, sinking fund, line loss, and cost of operating, maintaining, repairing, renewing and insuring the line and works.

9. If at any time any other municipal corporation, or pursuant to said Act, any railway or distributing company, or any other corporation or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the Corporation in writing, of a time and place and hour and hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favor of the applicants as to the price to be paid, for equal quantities of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred, and paid, and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said line is not adequate for such supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a municipal corporation taking power from the Commission at the time of such application without the written consent of such Corporation.

In determining the quantity of power supplied to a municipal corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a municipal corporation, shall be computed as part of the quantity supplied to such Corporation, but such Corporation shall not be liable to pay for the power so supplied, or otherwise in respect thereof. In order to prevent discrimination by the municipal corporation, no power shall be supplied by the municipal corporation to any railway or distributing company without the written consent of the Commission, but the Corporation may sell power to any person or persons or manufacturing companies inside the limits of the corporation, but such power shall not be sold for less than the cost and without discrimination as regards price and quantity.

10. In case any municipal corporation, or any person, firm or corporation which shall contract with the Commission or with any municipal corporation for a supply of power furnished to the Commission by the Power Company shall suffer damages by the act or neglect of the Power Company, and such municipal corporation, person, firm or corporation would, if the Power Company had made the said contracts directly with them, have had a right to recover such damages or commence any proceedings or any other remedy, the Commission shall be entitled to commence any such proceedings to bring such action for or on behalf of such municipal corporation, person, firm or corporation, and notwithstanding any acts, decision or rule of law to the contrary, the Commission shall be entitled to all the rights and remedies of such municipal corporation, person, firm or corporation, including the right to recover such damages, but no action shall be brought by the Commission until such municipal corporation, person, firm or corporation shall have agreed with the Commission to pay any costs that may be adjudged to be paid if such proceedings or action is unsuccessful. The rights and remedies of any such municipal corporation, person, firm or corporation shall not be hereby prejudiced.

11. It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement for the Corporations and other municipal Corporations supplied by the Commission, but the Commission shall be entitled to a lien upon said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the corporations and other municipal corporations, supplied by the Commission, having regard to the amounts paid by them, respectively, under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor-in-Council.

12. Each of the corporations agrees with the other:—

(*a*) To take electric power exclusively from the Commission during the continuance of this agreement, subject to the provisoes above set forth in paragraph 2 (*b*).

(*b*) To co-operate by all means in its power, at all times, with the Commission, to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement and of the said Act.

13. If differences arise between corporations to whom the Commission is supplying power, the Commission may upon application fix a time and place to hear all representations that may be made by the parties, and the Commission shall, in a summary manner when possible, adjust such differences and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a Commissioner appointed under *The Act respecting Enquiries Concerning Public Matters.*

14. If such differences arise between the Corporation and the Commission, the Lieutenant-Governor-in-Council may, upon application, fix a time and place to hear all representations that may be made by the parties, and the Lieutenant-Governor-in-Council shall, in a summary manner, when possible, adjust such differences and such adjustment shall be final. The Lieutenant-Governor-in-Council shall have all the powers that may be conferred upon a Commission appointed under *The Act respecting Enquiries Concerning Public Matters.*

15. This agreement shall extend to, be binding upon and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the Commission and the Corporation have respectively affixed their corporate seals and the hands of their proper officers.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

(Seal.)

Witness:
C. T. McBride,
Asst. City Clerk,
As to the execution of the
City of St. Catharines.

A. Beck, *Chairman.*
W. W. Pope, *Secretary.*
W. H. Murrell, *Mayor.*
J. A. Pay, *City Clerk.*

(Seal.)

SCHEDULE "C."

This indenture made in duplicate the 2nd day of April, in the year of Our Lord, One Thousand Nine Hundred and Thirteen.

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called the "Commission," party of the first part,

and

The Municipal Corporation of the Police Village of Brechin, hereinafter called the "Corporation," party of the second part.

Whereas pursuant to "An Act to provide for transmission of electrical power to Municipalities known as the Power Commission Act and amendments thereto," the Corporation applied to the Commission for a supply of power, and the Commission furnished the Corporation with estimates of the total cost of such power, ready for distribution within the limits of the Coroporation (and the electors of the Corporation assented to by-law authorizing the Corporation to enter into a contract with the Commission for such power).

1. Now therefore this indenture witnesseth that in consideration of the premises and of the agreement of the Corporation herein set forth subject to the provisions of the said Act and amendments thereto, the Commission agrees with the Corporation.

(*a*) To reserve and deliver at the earliest possible date 50 h.p. or more of electrical energy and power to the Corporation.

(*b*) At the expiration of reasonable notice in writing which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation additional electric energy and power when called for.

(*c*) To use at all times first-class, modern, standard commercial apparatus and plant, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Corporation.

(*d*) The power shall be delivered to the Corporation at a voltage suitable for distribution and at a frequency of approximately 60 cycles per second.

2. In consideration of the premises and of the agreements herein set forth, the Corporation agrees with the Commission:—

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement so as to be able to receive power when the Commission is ready to deliver same.

(*b*) To pay annually, interest at 4 per cent. per annum upon the Corporation's proportionate part (based on the quantity of electrical energy or power taken), of all moneys expended by the Commission on capital account for the acquiring of properties and rights, the acquiring and construction

of generating plants, transformer stations, transmission lines, distributing stations, and other works necessary for the delivery of said electrical energy or power to the Corporation under the terms of this contract.

Also to pay an annual sinking fund instalment of such amount as to form at the end of 30 years, with accrued interest, a sinking fund sufficient to repay the Corporation's proportionate part, based as aforesaid, of all moneys advanced by the Province of Ontario, for the acquiring of properties and rights, the acquiring and construction of generating plants, transformer stations, transmission lines, distributing stations and other work necessary for the delivery of said electrical energy or power delivered to the Corporation under the terms of this contract.

Also to pay the Corporation's proportionate part, based as aforesaid, of the cost of lost power, operating, maintaining, repairing, renewing and insuring said generating plants, transformer stations, transmission lines, distributing stations and other necessary works.

Also to pay a proportionate part, based as aforesaid, of any administration and rentals which may be necessary.

(*c*) The amounts payable under this contract shall be paid in twelve monthly payments, in gold coin of the present standard of weight and fineness, at the office of the Commission at Toronto, and bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bill remain unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*d*) To take electric power exclusively from the Commission during the continuance of this agreement.

(e) To co-operate by all means in its power at all times with the Commission to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement, and of the said Act.

(*f*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for it as herein provided whether it takes the same or not. When the greatest amount of power taken for any twenty consecutive minutes during any month shall exceed the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

(*g*) If the Corporation during any month takes more than the amount of power ordered and held in reserve for twenty consecutive minutes, the taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for and on the part of the Commission to hold in reserve an additional block of power in accordance with the terms and conditions of this contract.

(*h*) When the power factor of the greatest amount of power taken for said twenty consecutive minutes falls below 90 per cent. the Corporation shall pay for 90 per cent. of said power divided by the power factor.

(*i*) To use at all times first-class, modern, standard, commercial apparatus and plant, approved by the Commission.

(*j*) To exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Commission and the Corporation.

3. This agreement shall remain in force for thirty years from date of the first delivery of power under this contract.

4. The power shall be at a voltage suitable for local distribution, 60 cycle, 3 phase, alternating commercially continuous twenty-four-hour power every day in the year, and shall be delivered by the Commission to the Corporation at the distribution bus bars in the Corporation's distribution station within the Corporation limits.

(*a*) That the meters with their series and potential transformers shall be connected at the point of delivery.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the sub-station in the limits of the Corporation shall constitute the supply of all power involved herein and the fulfillment of all operating obligations hereunder, and when voltage and frequency are so maintained, the amount of the power, its fluctuations, load factor, power factor, distribution as to phases and all other electric characteristics and qualities are under the sole control of the Corporation, their agents, customers, apparatus, appliances, and circuits.

5. The engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant and property of the Corporation and take records at all reasonable hours.

6. The Commission shall at least annually adjust and apportion the amount or amounts payable by the Municipal Corporation or Corporations for such power and such interest, sinking fund, lost power, cost of generating, operating, maintaining, repairing, renewing and insuring said works.

7. If at any time any other Municipal Corporation or pursuant to said Act, any railway or distributing company or any other corporation or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the Corporation in writing, of such a time and place and hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favour of the applicants as to the price to be paid, for equal quantity of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred and paid, and to be paid, by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said line is not adequate for such a supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a Municipal Corporation taking power from the Commission at the time of such application without the written consent of the Corporation.

In determining the quantity of power supplied to a Municipal Corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a Municipal Corporation, shall be computed as part of the quantity supplied to such Corporation, but such Corporation shall not be liable to pay for the power so supplied, or otherwise in respect thereof no power shall be supplied by the Municipal Corporation to any railway or distributing company without the written consent of the Commission. Power shall not be sold for less than the cost and without discrimination as regards price and quantity.

8. It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement for the Corporation or Corporations supplied by the Commission, but the Commission shall be entitled to a lien upon said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporation and any other Corporations (if any) supplied by the Commission, having regard to the amounts paid by them respectively under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

9. If differences arise between the Corporations to whom the Commission is supplying power, the Commission may upon application fix a time and place and hear all representations that may be made by the parties, and the Commission shall, in a summary manner, when possible, adjust such differences and such adjustment shall be final. The Commission shall have all the power that may be conferred upon a Commissioner appointed under *The Act Respecting Enquiries Concerning Public Matters.*

10. This agreement shall extend to, and be binding upon and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the Commission and the Corporation have respectively affixed their corporate seals and the hands of their proper officers.

POLICE VILLAGE OF BRECHIN.

W. J. FRENCH,
P. J. KEHOR,
J. D. BRADY,
Trustees.

HYDRO ELECTRIC POWER COMMISSION OF ONTARIO.

W. W. POPE,
Secretary.

A. BECK,
Chairman.

SCHEDULE "D."

This indenture made in duplicate the twelfth day of February in the year of our Lord one thousand nine hundred and fourteen,

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called the "Commission," party of the first part,

and

The Municipal Corporation of the Village of Creemore, hereinafter called the "Corporation," party of the second part.

Whereas, pursuant to *An Act to Provide for Transmission of Electrical Power to Municipalities*, the Corporation applied to the Commission for a supply of power, and the Commission have entered into a contract with the Simcoe Railway & Power Co., and the electors of the Corporation assented to a by-law authorizing the Corporation to enter into a contract with the Commission for such power.

1. Now, therefore, this indenture witnesseth, that in consideration of the premises and of the agreements of the Corporation herein set forth, subject to the provisions of said Act and of the said contract, the Commission agrees with the Corporation:—

(*a*) To reserve and deliver at the earliest possible date 75 h.p. or more of electric power to the Corporation.

(*b*) At the expiration of thirty days' notice in writing, which may be given by the Corporation from time to time, during the continuance of this agreement, to reserve and deliver to the Corporation additional electric power when called for in blocks or 25 h.p. each, up to the limit of the capacity of the Power Company.

(*c*) To use at all times first-class, modern, standard commercial apparatus and plant, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Corporation.

(*d*) The power shall be delivered to the Corporation at approximately 2,200 volts and at approximately 60 cycles per second.

2. In consideration of the premises and of the agreements herein set forth, the Corporation agrees with the Commission:—

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement so as to be able to receive power when the Commission is ready to deliver same.

(*b*) Subject to the provisions of paragraph 2 (*f*) hereof, to pay the Commission the following prices: $20.00 per h.p. per annum for all power taken until the demands of the Commission on the Power Company shall equal or exceed 500 h.p.

When the demand of the Commission on the Power Company shall have increased to 500 h.p. to pay $19.00 per h.p. per annum for all or any proportion thereof taken by the Corporation.

When the demand of the Commission on the Power Company shall have increased to 1,000 h.p. to pay $18.00 per h.p. per annum for all or any proportion thereof taken by the Corporation.

When the demand of the Commission on the Power Company shall have increased to 1,500 h.p. to pay $16.50 per h.p. per annum for all or any proportion thereof taken by the Corporation.

Nothing herein contained shall bind the Commission to supply power on the demand of the Corporation after the demand of the Commission on the Power Company exceeds 1,500 h.p., unless the Power Company has power available or capable of development.

(*c*) To pay in addition annually, interest at 4 per cent. per annum upon moneys expended by the Commission on capital account for the construction of the transmission line, the transformer station equipment, and the other necessary works required for the delivery of power and transforming it from 22,000 to 2,200 volts.

Also to pay an annual part of the cost of the construction of said line, station and works so as to form in 30 years a sinking fund for the repayment of the moneys advanced by the Province of Ontario, in connection with this work.

Also to pay the cost of operating, maintaining, repairing, renewing and insuring the said line, station and works.

(*d*) The amounts payable under this contract shall be paid in twelve monthly payments, in gold coin of the present standard of weight and fineness, at the office of the Commission at Toronto, and bill shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*e*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*f*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve for it as herein provided whether it takes the same or not. When the greatest amount of power taken for any twenty consecutive minutes during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

If the Corporation during any month takes more than the amount of power ordered and held in reserve for it for twenty consecutive minutes, the taking of such excess shall therefore constitute an obligation on the part of the Corporation to pay for, and on the part of the Commission to hold in reserve an additional block of power in accordance with the terms and conditions of this contract.

When the power factor of the greatest amount of power taken for said twenty consecutive minutes falls below 90 per cent. the Corporation shall pay for 90 per cent. of said power divided by the power factor.

(*g*) To use at all times first-class, modern, standard commercial apparatus and plant, approved by the Commission.

(*h*) To exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Commission and the Corporation.

(*i*) To co-operate, by all means in its power, at all times, with the Commission, to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement and of the said Act.

3. This agreement shall remain in force for ten years from the date of the first delivery of power under this contract. The Corporation may, at its option, continue this agreement for one or two further consecutive terms, the first of these two additional terms being of five years' duration, and the second of such length that the expiry thereof shall fall on the 10th day of September, 1929.

(*a*) Provided, however, that in the event of the Commission being in a position to furnish power either by a further agreement with the Simcoe Railway & Power Company or otherwise, the Corporation may, at its option, continue this agreement for a further term of twelve years' duration.

(*b*) The Corporation may exercise the first of these options by giving notice in writing of its intention to continue this agreement for the second term of five years at least two years before the expiration of the first term of ten years.

(*c*) The Corporation may exercise the second of these options by giving notice to the Commission in writing of its intention to continue this agreement for the third term until the expiry days of September 10th, 1929, at least two years before the expiration of the second term of five years.

(*d*) The Corporation may, subject to the conditions set out in paragraph 3 (*a*) exercise the further option therein mentioned by giving the Commission notice in writing of its intention to continue this agreement for the further term of twelve years at least two years before the expiration of the terms falling on the 10th day of September, 1929.

4. The power shall be approximately 2,200 volts, 60 cycles, 3 phase, alternating commercially continuous twenty-four hour power every day in the year except as provided herein, and shall be delivered and measured by the Commission to the Corporation at the 2,200 volt terminals of the step-down transformers in the sub-station at present located in the Municipality of Stayner and serving the district in which the Corporation is located.

(*a*) That the meters with their series or potential transformers may be connected to the high-tension side or low-tension side of the transformers, or some connected to one side and some connected to the other,

as the Commission may elect. That whenever connected at other than the point of measurement their readings shall be subject to a correction and shall be corrected to give a reading such as would be obtained by instruments as if connected at the point of measurement. That such corrections shall be based upon tests made upon the step-down transformers and transmission lines by the Commission, or any other tests upon them acceptable to the Commission as to the efficiency, regulation, or any other constants of the transformers and the transmission lines necessary for said correction, but that such tests, when made by the Commission, are to be made in the presence of the representatives or representative of the customer if it so desires.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the sub-station serving the district in which the Corporation is located, shall constitute the supply of all power involved herein, and the fulfilment of all operating obligations hereunder; and when voltage and frequency are so maintained, the amount of power, its fluctuations, load factor, power factor, distribution as to phases, and all other electric characteristics and qualities are under the sole control of the Corporation, their agents, customers, apparatus, appliances and circuits.

5. The engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant and property of the Corporation and take records at all reasonable hours.

6. In case the Commission should at any time or times be prevented from supplying said power, or any part thereof, or in case the Corporation shall at any time be prevented from taking said power, or any part thereof, by strikes, lock-out, fire, invasion, explosion, act of God, or the King's enemies, or any other cause reasonably beyond their control, then the Commission shall not be bound to deliver such power during such times, and the Corporation shall not be bound to pay the price of said power during such time, but as soon as the cause of such interruption is removed, the Commission shall without any delay supply said power as aforesaid, and the Corporation shall take the same and shall be prompt and diligent in removing and overcoming such cause or causes of interruption.

7. If, and so often as, any interruption shall occur in the service of the Power Company, due to any cause or causes other than those provided for by the next preceding paragraph herein, the Commission shall recover and pay to the Corporation as liquidated and ascertained damages, and not by way of penalty, as follows:—

For any interruption of less than one hour double the amount payable for power which should have been supplied during the time of such interruption; and for any interruption of one hour or more the amount payable for the power which should have been delivered during the time of such interruption, and six times the last mentioned amount in addition thereto, and all moneys payable under this paragraph, when the amount thereof is settled between the Commission and the Company, may be deducted from any money payable by the Corporation to the Commission, but such right of deduction shall not in any case delay the said monthly payments.

8. If at any time any other Municipal Corporation, or pursuant to said Act, any railway or distributing company, or any other corporation or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the Corporation, in writing, of a time and place to hear all representations that may be made as to the terms and conditions of such supply.

Without discrimination in favor of the applicants as to the price to be paid, for equal quantity of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expenses incurred, and paid, and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said line is not adequate for such supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a Municipal Corporation taking power from the Commission at the time of such application without the written consent of such Corporation.

In determining the quantity of power supplied to a Municipal Corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a municipal corporation, shall be computed as part of the quantity supplied to such corporation, but such corporation shall not be liable to pay for the power so supplied, or otherwise in respect thereof. In order to prevent discrimination by the municipal corporation, no power shall be supplied by the municipal corporation to any railway or distributing company without the written consent of the Commission, but the Corporation may sell power to any person or persons or manufacturing companies inside the limits of the Corporation, but such power shall not be sold for less than the cost and without discrimination as regards price and quantity.

9. In case any municipal corporation, or any person, firm or corporation which shall contract with the Commission or with any municipal corporation for a supply of power furnished to the Commission by the Power Company shall suffer damages by the act or neglect of the Power Company, and such municipal corporation, person, firm or corporation would, if the Power Company had made the said contracts directly with them, have had a right to recover such damages or commence any proceedings or any other remedy, the Commission shall be entitled to commence any such proceedings or bring such action for or on behalf of such municipal corporation, person, firm or corporation, and notwithstanding any acts, decision or rule of law to the contrary, the Commission shall be entitled to all the rights and remedies of such municipal corporation, person, firm or corporation, including the right to recover such damages, but no action shall be brought by the Commission until such municipal corporation, person, firm or corporation shall have agreed with the Commission to pay any costs that may be adjudged to be paid if such proceedings or action is unsuccessful. The rights and remedies of any such municipal corporation, person, firm or corporation shall not be hereby prejudiced.

10. It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement for the Corporation and other municipal corporations supplied by the Commission, but the

Commission shall be entitled to a lien upon said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporations and other municipal corporations, supplied by the Commission, having regard to the amounts paid by them respectively, under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

11. If differences arise between corporations to whom the Commission is supplying power, the Commission may upon application fix a time and place to hear all representations that may be made by the parties, and the Commission shall, in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a Commissioner appointed under the *Act respecting Enquiries Concerning Public Matters.*

12. If differences arise between the Corporation and the Commission, the Lieutenant-Governor in Council may, upon application, fix a time and place to hear all representations that may be made by the parties, and the Lieutenant-Governor in Council shall, in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Lieutenant-Governor in Council shall have all the powers that may be conferred upon a Commissioner appointed under the *Act respecting Enquiries Concerning Public Matters.*

13. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the Commission and Corporation have respectively affixed their corporate seals and the hands of their proper officers.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck,

Chairman.

W. W. Pope,

Secretary.

(Seal.)

THE MUNICIPAL CORPORATION OF THE VILLAGE OF CREEMORE.

G. Copland,

Reeve.

A. H. Walson,

Clerk.

(Seal.)

SCHEDULE "E."

This indenture made this first day of November, A.D. 1914,

Between

The Hydro-Electric Power Commission of Ontario, acting herein on its own behalf and with the approval of the Lieutenant-Governor in Council (hereinafter called the Commission), party of the first part,

and

The Municipal Corporation of the Police Village of Williamsburg, (hereinafter called the Corporation), party of the second part.

Whereas pursuant to "An Act to provide for transmission of electrical power to Municipalities," and the amendments thereto, the Corporation applied to the Commission to transmit and supply such power, and the Commission has entered into contracts with a company or companies for the supply of such power at the prices set forth in the schedule hereto attached, and the Commission has furnished the Corporation with estimates, as shown in the schedule of the total cost of such power, and the electors of the Corporation assented to by-laws authorizing the Corporation to enter into a contract with the Commission for such power, and the Commission have estimated the line loss and the cost to construct, operate, maintain, repair, renew and insure a line to transmit such power to the Corporation, and have apportioned the part of such cost to be paid by each corporation as shown in said schedule.

Now therefore this indenture witnesseth that in consideration of the premises and of the agreements of the Corporation herein set forth, subject to the provisions of said Act and the amendments thereto, and of the said contracts subject to any variations thereof by the Corporation, the Commission agrees with the Corporation respectively:—

1. (*a*) To construct a line to transmit the quantities of electric power, shown in column 2 of the said schedule, to the Corporation shown in column 1 respectively.

(*b*) On the 15th day of May, 1915, or on any earlier day on which the Commission shall be prepared to supply said power in quantities set forth in column 2 of the said schedule to the Corporation within the limits thereof, ready for distribution at approximately the number of volts set forth in column 4 of said schedule, and approximately 60 cycles per second frequency.

(*c*) At the expiration of three months' written notice, which may be given by the Corporation from time to time during the continuance of this agreement, to supply from time to time to the Corporation in blocks of not less than 10 horse power each, additional power until the total amount so supplied shall amount to 15,000 horse power, or such further amount as the Commission may be able and willing to supply.

(*d*) To use at all times first-class, modern, standard, commercial apparatus and plant and to exercise all due skill and diligence so as to secure the most perfect operation of the plant and apparatus of the Corporation.

In consideration of the premises and of the agreements herein set forth each of the Corporations, for itself, and not one for the other, agrees with the Commission:—

2. (*a*) Subject to the provisions of paragraph 2 (*g*) hereof, to pay to the Commission for the quantities of power shown in column 2 of said schedule to be supplied as aforesaid from the date when the Commission notifies the Corporation that it is ready to supply such power, and for all additional power held in reserve upon any of the above mentioned notices from the respective dates thereof until the termination of this Agreement, the price set forth in column 3 of said schedule in twelve monthly payments, in gold coin of the present standard of weight and fineness, and bills shall be rendered by the Commission on or before the fourth day and paid by the Corporation on or before the fifteenth day of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice, discontinue the supply of such power to the Corporation in default until said bill is paid. No such discontinuance shall relieve the Corporation in default from the performance of the covenants, provisoes, and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*b*) To take electric power exclusively from the Commission during the continuance of this agreement; provided, if the Commission is unable to supply said power as quickly as required, the Corporation may obtain the supply otherwise until the Commission has provided such supply, thereupon the Corporation shall immediately take from the Commission; and the Corporation may generate, store or accumulate electric power for emergencies, or to keep down the peak load of the power taken from the Commission; and nothing herein contained shall affect existing contracts between the Corporation and other parties for a supply of electric power, but the Corporation shall determine said contracts at the earliest possible date.

(*c*) To pay, annually, interest at four per cent. per annum upon its proportionate part of the moneys expended by the Commission on capital account for the construction of the said line, transformer stations and other necessary works, shown, respectively, in column 6 of said schedule, subject to adjustment under paragraph 9.

(*d*) To pay an annual sum for its proportionate part of the cost of the construction of said line, stations and works, shown, respectively, in column 6 of said schedule, subject to adjustment under paragraph 9, so as to form in thirty years a sinking fund for the retirement of the securities to be issued by the Province of Ontario.

(*e*) To bear its proportionate part of the line loss and pay its proportionate part of the cost to operate, maintain, repair, renew and insure the said line, stations and works, shown, respectively, in column 7 of said schedule, subject to adjustment under paragraph 9.

(*f*) To keep, observe and perform the covenants, provisoes and conditions set forth in said contracts, intended by the Commission and the Company to be kept and observed and performed.

(*g*) To pay as a minimum for three-fourths of the power to be supplied at said date or of the power held in reserve upon any of the said notices, whether the said power is taken or not; and when the greatest amount of power taken for twenty consecutive minutes in any month shall exceed

during such twenty minutes three-fourths of the amount to be supplied and held in reserve to pay for this greater amount during that entire month; the amount payable for a month being one-twelfth part of the annual rate applicable to the horse power in question. When the power factor of the greatest amount of power taken for said twenty minutes falls below 90 per cent., the Corporation shall pay for 90 per cent. of said power divided by the power factor.

(*h*) To take no more power than the amount to be supplied and held in reserve at said date and upon said notices, as per paragraph 1 (*c*).

(*i*) To use at all times first-class, modern, standard, commercial apparatus and plant to be approved by the Commission.

(*j*) To exercise all due skill and diligence so as to secure the most perfect operation of the plant and apparatus of the Commission and the Company.

3. If, as herein provided, the said contracts are continued until nineteen hundred and forty-two (1942) this agreement shall remain in force until that date.

4. (*a*) Said power shall be three phase, alternating, commercial continuous twenty-four hour power every day of the year, except as provided in paragraph 6 hereof, and shall be measured by curve-drawing meters, subject to test as to accuracy by either party hereto.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the point of delivery to the Corporation shall constitute the supply and the holding in reserve of all power involved herein, and the fulfilment of all operating obligations hereunder; the amount of the power, its fluctuations, load factor, power factor, distribution as to phases, and all other electric characteristics and qualities being under the sole control of the Corporation, its agents, customers, apparatus, appliances and circuits.

5. The engineers of the Commission, or one or more of them or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant and property of the Corporation, and take records at all reasonable times on giving to the Corporation six hours' notice of the intention to make such inspection. The Corporation shall have a like right on giving a like notice to inspect the apparatus, plant and property of the Commission.

6. In case the Commission or the Company shall at any time or times be prevented from supplying said power, or any part thereof, or in case the Corporation shall at any time be prevented from taking such power, or any part thereof, by strike, lock-out, riot, fire, invasions, explosion, act of God or the King's enemies, or any other cause reasonably beyond their control, then the Commission shall not be bound to deliver such power during such time and the Corporation shall not be bound to pay the price of said power at the point of delivery by the Company during such time, but the Corporaion shall continue to make all other payment, but as soon as the cause of such interruption is removed the Commission shall without any delay supply said power as aforesaid, and the Corporation shall take the same and each of the parties hereto shall be prompt and diligent in removing and overcoming such cause or causes of interruption.

7. If, and so often as, any interruption shall occur in the service of the Company due to any cause or causes other than those provided for by the next preceding paragraph hereof, the Commission shall pay to the Corporation as liquidated and ascertained damages, and not by way of penalty, their respective proportionate shares of whatever sum is payable to the Commission by reason of such interruption; and when the amount thereof has been settled, such sum many be deducted from any moneys payable by the Corporation to the Commission, but such right of deduction shall not in any case delay the said monthly payments, nor shall the Commission be subject to any other liability for any non-delivery.

8. In case any municipal corporation, or any person, firm or corporation, which shall contract with the Commission or with any municipal corporation for a supply of power furnished to the Commission by the Company, shall suffer damages by the act or neglect of the Company, and such municipal corporation, person, firm or corporation would, if the Company had made the said contracts directly with them, have had a right to recover such damages or commence any proceedings or any other remedy, the Commission shall be entitled to commence any such proceedings or bring such action for or on behalf of such municipal corporation, person, firm or corporation, and notwithstanding any statute, decision or rule of law to the contrary, the Commission shall be entitled to all the rights and remedies of such municipal corporation, person, firm or corporation, including the right to recover such damages, but no action shall be brought by the Commission until such municipal corporation, person, firm or corporation shall have agreed with the Commission to pay any costs that may be adjudged to be paid if such proceedings or action is unsuccessful. The rights and remedies of any such municipal corporation, person, firm or corporation shall not be hereby prejudiced.

9. The Commission shall at least annually adjust and apportion the amounts payable by municipal corporations for such power and such interest, sinking fund, line loss, and cost of operating, maintaining, repairing, renewing, and insuring the line and works.

10. (*a*) If at any time any other municipal corporation, or, pursuant to said Act, any railway or distributing company or any other corporation or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the corporation, party hereto, in writing, of a time and place and hear all representations that may be made as to the terms and conditions for such supply.

(*b*) Without discrimination in favor of the applicants as to the price to be paid, for equal quantities of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred, and paid, and to be paid by the Corporation, party hereto, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

(*c*) No such application shall be granted if the said line is not adequate for such supply, or if the supply of the Corporation, party hereto, will be thereby injuriously affected, and no power shall be supplied within the limits of a municipal corporation taking power from the Commission at the time of such application, without the written consent of such corporation.

(*d*) In determining the quantity of power supplied to a municipal corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a municipal corporation, shall be computed as part of the quantity supplied to such corporation, but such corporation shall not be liable to pay for the power so supplied, by any municipal corporation, to any railway or distributing company, without the written consent of the Commission.

11. It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement, for the corporation and other municipal corporations supplied by the Commission, but the Commission shall be entitled to a lien upon said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement, the Commission shall determine and adjust the rights of the Corporation and other municipal corporations, supplied by the Commission, having regard to the amounts paid by them, respectively, under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

12. Each of the Corporations agrees with the other:—

(*a*) To take electric power exclusively from the Commission during the continuance of this agreement, subject to the provisoes above set forth in paragraph 2 (*b*).

(*b*) To co-operate, by all means in its power, at all times, with the Commission, to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement and of the said Act.

13. If differences arise between the Corporations the Commission may upon application fix a time and place to hear all representations that may be made by the parties and the Commission shall, in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a Commissioner appointed under the Act respecting Enquiries concerning Public Matters.

14. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the Corporation and the Commission have respectively affixed their corporate seals and the hands of their proper officers.

THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck, *Chairman.*

(Seal)

W. W. Pope, *Secretary.*

POLICE VILLAGE OF WILLIAMSBURG.

Olliver Becker, *Secretary.*
P. E. Beckstead, *Chairman.*
E. C. Murkley, *Inspecting Trustee.*

(Seal)

Column 1	2	3	4	5	6	7
Name of Municipal Corporation.	Quantity of Power applied for in H.P.	Cost of Power at Point of delivery to Commission.	No. of Volts.	Estimate Maximum cost of power ready for distribution in municipality.	Estimate proportionate part of cost to construct transmission line, transformer station and works for nominally....h.p. with total capacity of....	Estimate proportionate part of line loss and of part cost of to operate, maintain, repair, renew and insure transmission line, transformer station works for nominally....h.p. with capacity of....h.p.
Brockville	1,000	$14.00 for not less than 2,000 h.p.....	13,000	$24 04	$76.950	$7,077
Prescott	300	Then for all power taken up to 4,000 h.p., $13.40 per h.p.....	13,200	24 54	30,594	1,838
Chesterville	50	Then for all power taken up to 6,000 h.p., 12.50 per h.p.....	4,400	35 00	10,224	487
Winchester	100	Then for all power taken up to 8,000 h.p., 12.00 per h.p.....	4,400	24 00	7,280	638
Williamsburg	20	Then for all power taken up to 10,000 h.p., 11.50 per h.p.....	4,000	34 66 (Without Sinking Fund.)	3,522	272
		Then for all power taken up to 10,000 h.p. or over, $11.00 per h.p....				

SCHEDULE "F."

This Indenture, made in duplicate this 12th day of May, in the year of our Lord A.D. 1914,

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called the "Commission," party of the first part,

and

The Municipal Corporation of the Township of Grantham, herein called the "Corporation," party of the second part.

Whereas, pursuant to an Act to provide for the transmission of electrical power to municipalities, the Corporation applied to the Commission for a supply of power;

And whereas the Corporation under the provisions of *The Power Commission Act* and amendments thereto, the Power Commission Act of 1911, being *An Act to Provide for the Local Distribution of Electrical Power*, has, at the request of a number of ratepayers (petitioners) applied to the Commission for a supply of electrical power and energy, and has passed a by-law, No. 262, to authorize the execution of an agreement therefor;

1. Now therefore this indenture witnesseth that in consideration of the premises and of the agreements of the Corporation set forth, subject to the provisions of said Act and amendments and of the said contract, the Commission agrees with the Corporation:—

(*a*) To reserve and deliver at earliest possible date 100 h.p. of electrical power to the Corporation.

(*b*) At the expiration of thirty (30) days' notice in which which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation additional electrical power as may be required from time to time.

(*c*) To use at all times first-class, modern, standard, commercial apparatus and plant, and to exercise due skill and diligence so as to secure the most perfect operation of the plant and apparatus of the Corporation.

(*d*) Power shall be delivered to the Corporation at approximately 2,200 or 4,000 volts.

2. In consideration of the premises and of the covenants and agreements herein set forth, the Corporation agrees with the Commission:—

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement, so as to be able to give notice as specified in paragraph 1 (*b*).

(*b*) Subject to the provisions of paragraph 2 (*h*) herein to pay the Commission $17.00 per h.p. per annum for all power taken.

It is further understood and agreed that the Commission will supply and construct all 2,200 volt lines made necessary by contracts for electric service made between the Corporation and residents or users, within the township, from the Commission's transformer station or stations to the service transformers of the Corporation, and in addition to the cost of power as shown, the Corporation will pay to the Commission interest and sinking fund on a thirty year basis on all capital so invested in 2,200 volt lines, payments to be made in quarterly instalments as provided hereinafter.

(*c*) The amounts payable in accordance with clause 2 (*b*) shall be paid in four quarterly payments, in gold coin of the present standard of weight and fineness, at the office of the Commission at Toronto, and bills shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at six per cent.

(*d*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*e*) To pay for three-fourths of the power ordered from time to time by the Corporation and hold in reserve for it as herein provided whether it takes the same of not. When the greatest amount of power taken for any twenty consecutive minutes during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month.

If the Corporation during any month takes more than the amount of power ordered and held in reserve for it for twenty consecutive minutes, the Corporation shall pay for this greater amount of power during the entire month. The taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for and on the part of the Commission to hold in reserve an additional block of power in accordance with the terms and conditions of this contract.

When the power factor of the greatest amount of power taken for said twenty consecutive minutes falls below 90 per cent., the Corporation shall pay for 90 per cent. of said power divided by the power factor.

(*f*) To use at all times first-class, modern, standard, commercial apparatus and plant to be approved by the Commission.

(*g*) To exercise all due skill and diligence so as to secure the most perfect operation of the plant and apparatus of the Commission and the Corporation.

(*h*) It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement for the Corporation and other municipal corporations supplied by the Commission,

but the Commission shall be entitled to a lien upon said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the Corporations and other municipal corporations supplied by the Commission, having regard to the amounts paid by them, respectively, under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

3. This agreement shall remain in force for thirty years from the date hereof.

4. (*a*) The power so taken shall be measured at the 4,000 volt side of the step-down transformers in the sub-station in the Corporation by graphic recording curve drawing meters, subject to test as to accuracy by either party hereto.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at the sub-station in the limits of the Corporation shall constitute the supply of all power involved herein and the fulfilment of all operating conditions hereunder; and when voltage and frequency are so maintained, the amount of the power, its fluctuations, load factor, power factor, distribution as to phases, and all other electric characteristics and qualities are under the sole control of the Corporation, their agents, customers, apparatus, appliances and circuits.

5. The engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the cintinuance of this agreement to inspect the apparatus, plant and property of the Corporation and take records at all reasonable hours.

6. In case the Commission should at any time or times be prevented from supplying said power, or any part thereof, or in case the Corporation shall at any time be prevented from taking said power, or any part thereof, by strike, or lock-out, fire, invasion, explosion, act of God, or the King's enemies, or any other cause reasonably beyond their control, then the Commission shall not be bound to deliver such power during such times, and the Corporation shall not be bound to pay the price of said power during such time, but as soon as the cause of such interruption is removed, the Commission shall without delay supply said power as aforesaid, and the Corporation shall take the same and shall be prompt and diligent in removing and overcoming such cause or causes of interruption.

7. If, and so often as, any interruption shall occur in the service of the Company due to any cause or causes, other than those provided for by the next preceding paragraph hereof, the Commission shall recover and pay to the Corporation as liquidated and ascertained damages and not by way of penalty, as follows:—

For any interruption less than one hour double the amount payable for power which should have been supplied during the time of such interruption; and for any interruption of one hour or more, the amount payable for the power which should have been supplied during the time of such interruption and twelve times the last mentioned amount in addi-

tion thereto, and all moneys payable under this paragraph when the amount thereof is settled between the Commission and the Company, may be deducted from any moneys payable by the Corporation to the Commission, but such right of deduction shall not in any case delay the said monthly payments.

8. If at any time any other municipal corporation or, pursuant to said Act, any railway or distributing company, or any other corporation or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the Corporation in writing of a time and place and hear all representations that may be made as to the terms and conditions for such supply.

Without discrimination in favor of the applicants as to the price to be paid, for equal quantity of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expenses incurred, and paid, and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said line is not adequate for such supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a municipal corporation taking power from the Commission at the time of such application without the written consent of such Corporation.

In determining the quantity of power supplied to a municipal corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a municipal corporation, shall be computed as part of the quantity supplied to such corporation, but such corporation shall not be liable to pay for the power supplied, or otherwise in respect thereof. In order to prevent discrimination by the Municipal Corporation no power shall be supplied by the Municipal Corporation to any railway or distributing company without the written consent of the Commission, but the Corporation may sell power to any person or persons or manufacturing companies inside the limits of the Corporation, but such power shall not be sold for less than the cost and without discrimination as regards price and quantity.

9. In case any municipal corporation, or any person, firm or corporation which shall contract with the Commission or with any municipal corporation for a supply of power furnished to the Commission by the Power Company, shall suffer damages by the act or neglect of the Power Company, and such municipal corporation, person, firm or corporation would, if the Power Company had made the said contracts directly with them, have had a right to recover such damages or commence any proceedings or any other remedy, the Commission shall be entitled to commence any such proceedings to bring such action for or on behalf of such municipal corporation, person, firm, or corporation, and notwithstanding any acts, decision or rule of law to the contrary, the Commission shall be entitled to all the rights and remedies of such municipal corporation, person, firm or corporation, including the right to recover such damages, but no action shall be brought by the Commission until such municipal corporation, person, firm or corporation shall have agreed with the Commission to pay any costs that may be adjudged to be paid if such proceedings or action

is unsuccessful. The rights and remedies of any such municipal corporation, person, firm or corporation shall not be hereby prejudiced.

10. If differences arise between corporations to whom the Commission is supplying power, the Commission may upon application fix a time and place to hear all representations that may be made by the parties, and the Commission shall, in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a Commissioner appointed under the Act respecting Enquiries concerning Public Matters.

11. If differences arise between the Corporation and the Commission, the Lieutenant-Governor in Council may, upon application, fix a time and place to hear all representations that may be made by the parties, and the Lieutenant-Governor in Council shall, in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Lieutenant-Governor in Council shall have all the powers that may be conferred upon a Commissioner appointed under the Act respecting Enquiries concerning Public Matters.

12. To co-operate, by all means in its power, at all times, with the Commission, to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement and of the said Act.

13. This agreement shall extend to, be binding upon and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the Commission and the Corporation have respectively affixed their corporate seals and the hands of their proper officers.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck, *Chairman.*

(Seal)

W. W. Pope, *Secretary.*

THE MUNICIPAL CORPORATION OF THE TOWNSHIP OF GRANTHAM.

L. S. Hessevy, *Clerk.*

Fred. Hewart, *Reeve.*

SCHEDULE "G."

This Indenture, made (in duplicate) this tenth day of March, in the year of our Lord one thousand nine hundred and fourteen,

Between

The Hydro-Electric Power Commission of Ontario, hereinafter called the "Commission," of the first part,

and

The Corporation of the Township of Tay, hereinafter called the "Corporation," of the second part.

Whereas, pursuant to "An Act to provide for local distribution of electrical power" known as "The Power Commission Act of 1911," the Corporation of the Township of Tay has, at the request of a number of ratepayers (petitioners), applied to the Commission for the supply of electrical power and energy, and has passed a by-law, No. 597, to authorize the execution of an agreement;

Now, therefore, this Indenture witnesseth, that in consideration of the premises and of the agreements of the Corporation herein set forth, subject to the provisions of said Act and of the said contract, the Commission agrees with the Corporation:—

1. (*a*) To reserve and deliver at the earliest possible date 100 h.p. or more of electric power to the Corporation at two different points in the Township, known respectively as Waubaushene and Port McNicoll, and to erect sub-stations at both of these points for the purpose of receiving the power and stepping down the power to a voltage suitable for distribution purposes.

(*b*) At the expiration of thirty days' notice in writing, which may be given by the Corporation from time to time during the continuance of this agreement, to reserve and deliver to the Corporation additional electric power when called for in blocks of 25 h.p. each up to the limit of the capacity of the Power Company.

(*c*) To use at all times first-class, modern, standard commercial apparatus and plant, and to exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Corporation.

(*d*) The power shall be delivered to the Corporation at approximately 2,200 volts, and at approximately 60 cycles per second, at both sub-stations hereinbefore mentioned.

2. In consideration of the premises and of the agreements herein set forth, the Corporation agrees with the Commission:—

(*a*) To use all diligence by every lawful means in its power to prepare for the receipt and use of the power dealt with by this agreement so as to be able to receive power when the Commission is ready to deliver same.

(*b*) Subject to the provisions of 2 (*f*) hereof, to pay the Commission the following prices:—$20.00 per h.p. per annum for all power taken until the demands of the Commission on the Power Company shall equal or exceed 500 h.p.

When the demand of the Commission on the Power Company shall have increased to 500 h.p. to pay $19.00 per h.p. per annum for all or any proportion thereof taken by the Corporation.

When the demand of the Commission on the Power Company shall have increased to 1,000 h.p. to pay $18.00 per h.p. per annum for all or any proportion thereof taken by the Corporation.

When the demand of the Commission on the Power Company shall have increased to 1,500 h.p. to pay $16.50 per h.p. per annum for all or any proportion thereof taken by the Corporation.

Nothing herein contained shall bind the Commission to supply power on the demand of the Corporation after the demand of the Commission on the Power Company exceeds 1,500 h.p., unless the Power Company has power available or capable of development.

(*c*) To pay in addition annually, interest at 4½ per cent. per annum upon the moneys expended by the Commission on capital account for the construction of the two transformer stations and equipment, and any other necessary works required for the delivery of power and transforming it from 22,000 to 2,200 volts.

Also to pay an annual part of the cost of the construction of said sub-stations and works, so as to form in thirty years a sinking fund for the retirement of the moneys advanced by the Province of Ontario in connection with this work.

Also to pay the cost of operating, maintaining, repairing, renewing and insuring the said sub-stations and works.

(*d*) The amounts payable under this contract shall be paid in twelve monthly payments, in gold coin of the present standard of weight and fineness, at the office of the Commission at Toronto, and bill shall be rendered by the Commission on or before the 5th day and paid by the Corporation on or before the 15th day of each month. If any bill remains unpaid for fifteen days, the Commission may, in addition to all other remedies and without notice, discontinue the supply of power to the Corporation until said bill is paid. No such discontinuance shall relieve the Corporation from the performance of the covenants, provisoes and conditions herein contained. All payments in arrears shall bear interest at the legal rate.

(*e*) To take electric power exclusively from the Commission during the continuance of this agreement.

(*f*) To pay for three-fourths of the power ordered from time to time by the Corporation and held in reserve, as herein provided, whether it takes the same or not. When the sum of the greatest amounts of power taken for any twenty consecutive minutes at the two locations at which

the power is to be delivered during any month shall exceed during the twenty consecutive minutes three-fourths of the amount ordered by the Corporation and held in reserve, then the Corporation shall pay for this greater amount during the entire month, and when this sum exceeds the amount of power ordered and held in reserve for it as aforesaid, the taking of such excess shall thereafter constitute an obligation on the part of the Corporation to pay for, and on the part of the Commission to hold in reserve, an additional block of power in accordance with the terms and conditions of this contract.

When the power factor of the greatest amount of power taken for the said twenty consecutive minutes falls below 90 per cent. the Corporation shall pay for 90 per cent. of said power divided by the power factor, this clause to apply separately to each of the two sub-stations at which the power is delivered.

(*g*) To use at all times first-class, modern, standard commercial apparatus and plant, approved by the Commission.

(*h*) To exercise all due skill and diligence so as to secure satisfactory operation of the plant and apparatus of the Commission and the Corporation.

(*i*) To co-operate, by all means in its power, at all times, with the Commission, to increase the quantity of power required from the Commission, and in all other respects to carry out the objects of this agreement and of the said Act.

3. This agreement shall remain in force for ten years from the date of the first delivery of power under this contract. The Corporation may, at its option, continue this agreement for one or two further consecutive terms, the first of these two additional terms being of five years' duration, and the second of such length that the expiry thereof shall fall on the 10th day of September, 1929.

(*a*) Provided, however, that in the event of the Commission being in a position to furnish power either by a further agreement with the Simcoe Railway & Power Company or otherwise, the Corporation may, at its option, continue this agreement for a further term of twelve years' duration.

(*b*) The Corporation may exercise the first of these options by giving notice in writing of its intention to continue this agreement for the second term of five years at least two years before the expiration of the first term of ten years.

(*c*) The Corporation may exercise the second of these options by giving notice to the Commission in writing of its intention to continue this agreement for the third term until the expiry day of September 10th, 1929, at least two years before the expiration of the second term of five years.

(*d*) The Corporation may, subject to the conditions set out in paragraph 3 (*a*) exercise the further option therein mentioned by giving the Commission notice in writing of its intention to continue this agreement for the further term of twelve years at least two years before the expiration of the terms falling on the 10th day of September, 1929.

4. The power shall be approximately 2,200 volts, 60 cycles, three phase alternating, commercially continuous 24 hour power, every day in the year except as provided herein, and shall be delivered and measured by the Commission to the Corporation at the 2,200 volt terminals of the step-down transformers in the sub-stations located at the two different points in the township hereinbefore mentioned.

(*a*) That the meters, with their series of potential transformers, may be connected at either of the two sub-stations, or at both, to the high-tension side or low-tension side of the transformers, or some connected to one side and some connected to the other, as the Commission may elect. That whenever connected to other than the point of measurement their readings shall be subject to a correction and shall be corrected to give a reading such as would be obtained by instruments as if connected at the point of measurement. That such corrections shall be based upon tests made upon the step-down transformers and transmission lines by the Commission, or any other tests upon them acceptable to the Commission as to the efficiency, regulation, or any other constants of the transformers and the transmission lines necessary for said correction, but that such tests, when made by the Commission, are to be made in the presence of the representatives or representative of the customer if it so desires.

(*b*) The maintenance by the Commission of approximately the agreed voltage at approximately the agreed frequency at both of the sub-stations previously mentioned at which the power is to be delivered, shall constitute the supply of all power involved herein, and the fulfilment of all operating obligations hereunder; and when voltage and frequency are so maintained, the amount of power, its fluctuations, load factor, power factor, distribution as to phases, and all other electric characteristics and qualities are under the sole control of the Corporation, their agents, customers, apparatus, appliances and circuits.

5. The engineers of the Commission, or one or more of them, or any other person or persons appointed for this purpose by the Commission, shall have the right from time to time during the continuance of this agreement to inspect the apparatus, plant and property of the Corporation and take records at all reasonable hours.

6. In case the Commission should at any time or times be prevented from supplying said power, or any part thereof, or in case the Corporation shall at any time be prevented from taking said power, or any part thereof, by strikes, lock-out, fire, invasion, explosion, act of God, or the King's enemies, or any other cause reasonably beyond their control, then the Commission shall not be bound to deliver such power during such times, and the Corporation shall not be bound to pay the price of said power during such times, but as soon as the cause of such interruption is removed, the Commission shall without any delay supply said power a saforesaid, and the Corporation shall take the same and shall be prompt and diligent in removing and overcoming such cause or causes of interruption.

7. If, and so often as, any interruption shall occur in the service of the Power Company due to any cause or causes other than those provided for by the next preceding paragraph herein, the Commission shall recover and pay to the Corporation as liquidated and ascertained damages, and not by way of penalty, as follows:—

For any interruption of less than one hour double the amount payable for power which should have been supplied during the time of such interruption; and for any interruption of one hour or more the amount payable for the power which should have been delivered during the time of such interruption, and six times the last mentioned amount in addition thereto, and all moneys payable under this paragraph, when the amount thereof is settled between the Commission and the Company, may be deducted from any money payable by the Corporation to the Commission, but such right of deduction shall not in any case delay the said monthly payments.

8. If at any time any other municipal corporation or, pursuant to said Act, any railway or distributing company, or any other corporation or person, applies to the Commission for a supply of power, the Commission shall notify the applicant and the Corporation in writing, of a time and place and hear all representations that may be made as to the terms and conditions of such supply.

Without discrimination in favor of the applicants as to the price to be paid for equal quantity of power, the Commission may supply power upon such terms and conditions as may, having regard to the risk and expense incurred, and paid and to be paid by the Corporation, appear equitable to the Commission, and are approved by the Lieutenant-Governor in Council.

No such application shall be granted if the said line is not adequate for such supply, or if the supply of the Corporation will be thereby injuriously affected, and no power shall be supplied within the limits of a municipal corporation taking power from the Commission at the time of such application without the written consent of such Corporation.

In determining the quantity of power supplied to a municipal corporation, the quantity supplied by the Commission within the limits of the Corporation to any applicant, other than a municipal corporation, shall be computed as part of the quantity supplied to such Corporation, but such Corporation shall not be liable to pay for the power so supplied, or otherwise in respect thereof. In order to prevent discrimination by the municipal corporation, no power shall be supplied by the municipal corporation to any railway or distributing company without the written consent of the Commission, but the Corporation may sell power to any person or persons or manufacturing companies inside the limits of the Corporation, but such power shall not be sold for less than the cost and without discrimination as regards price and quantity.

9. In case any municipal corporation, or any person, firm or corporation which shall contract with the Commission or with any municipal corporation for a supply of power furnished to the Commission by the Power Company shall suffer damages by the act or neglect of the Power Company, and such municipal corporation, person, firm or corporation would, if the Power Company had made the said contracts directly with them, have had a right to recover such damages or commence any proceedings or any other remedy, the Commission shall be entitled to commence any such proceedings or bring such action for or on behalf of such municipal corporation, person, firm or corporation, and notwithstanding any acts, decision or rule of law to the contrary, the Commission shall be entitled to all the rights and remedies of such municipal corporation, person, firm

or corporation, including the right to recover such damages, but no action shall be brought by the Commission until such municipal corporation, person, firm or corporation shall have agreed with the Commission to pay any costs that may be adjudged to be paid if such proceedings or action is unsuccessful. The rights and remedies of any such municipal corporation, person, firm or corporation shall not be hereby prejudiced.

10. It is hereby declared that the Commission is to be a trustee of all property held by the Commission under this agreement for the corporations and other municipal corporations supplied by the Commission, but the Commission shall be entitled to a lien upon said property for all moneys expended by the Commission under this agreement and not repaid. At the expiration of this agreement the Commission shall determine and adjust the rights of the corporations and other municipal corporations supplied by the Commission, having regard to the amounts paid by them respectively under the terms of this agreement, and such other considerations as may appear equitable to the Commission and are approved by the Lieutenant-Governor in Council.

11. If differences arise between corporations to whom the Commission is supplying power, the Commission may, upon application, fix a time and place to hear all representations that may be made by the parties, and the Commission shall, in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Commission shall have all the powers that may be conferred upon a Commissioner appointed under *The Act respecting Enquiries concerning Public Matters.*

12. If differences arise between the Corporation and the Commission, the Lieutenant-Governor in Council may, upon application, fix a time and place to hear all representations that may be made by the parties, and the Lieutenant-Governor in Council shall, in a summary manner, when possible, adjust such differences, and such adjustment shall be final. The Lieutenant-Governor in Council shall have all the powers that may be conferred upon a Commissioner appointed under *The Act respecting Enquiries concerning Public Matters.*

13. This agreement shall extend to, be binding upon, and enure to the benefit of the successors and assigns of the parties hereto.

In witness whereof the Commission and the Corporation have respectively affixed their corporate seals and the hands of their proper officers.

HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO.

A. Beck, *Chairman.*
W. W. Pope, *Secretary.*
(Seal)

CORPORATION OF THE TOWNSHIP OF TAY.

J. O. Stafford, *Reeve.*
T. M. Brown, *Clerk.*

(Seal)

SCHEDULE "H."

To Close Portions of Certain Road Allowances in the Township of Artemesia, Passed 20th March, 1915.

Whereas, upon request of the Hydro-Electric Power Commission of Ontario, they having purchased the greater portion of the lands affected, and desiring to flood the same, together with certain public highways in connection with their development of electric energy, it is recommended that portions of certain road allowances in the Township of Artemesia, as set forth in a plan submitted by the said Commission, and being the several parcels hereinafter described, be stopped up and closed, and that a by-law be introduced for this purpose.

And whereas it is expedient to pass such by-law.

Therefore the Council of the Township of Artemesia enact as follows:—

That so much of each of the said road allowances be stopped up and closed as is hereinafter described, that is to say:—

Parcel 1.—All that part of the road allowance between the 10th and 11th concessions of the Township of Artemesia from the easterly limit of Inkerman Street to the westerly limit of the road allowance between lots 35 and 36 in same concessions, containing by admeasurement 17 acres, be the same more or less.

Parcel 2.—All that part of the road allowance between lots 30 and 31 in the 10th, 11th and part of the 12th concessions of the Township of Artemesia from the southerly limit of lots 30 and 31 in the 10th concession to a point 11 chains north of the southerly limits of lots 30 and 31 in the 10th concession, containing by admeasurement 11.2 acres, be the same more or less.

Parcel 3.—All that part of East Street in Townplot of Eugenia in the Township of Artemesia extending from the northerly limit of the 10th concession to 2 chains southerly of the southerly limit of the said 10th concession, containing by admeasurement 5.2 acres, be the same more or less.

Parcel 4.—All that part of Kinburn Street in the Townplot of Eugenia in the Township of Artemesia extending from the southerly limit of Codrington Street to the southerly limit of Simpson Street, containing by admeasurement 1.1 acres, be the same more or less.

Parcel 5.—All that part of Codrington Street extending from the easterly limit of Cardigan Street to the westerly limit of East Street, containing by admeasurement 2.1 acres, be the same more or less.

Parcel 6.—All that part of Pellisier Street extending from the easterly limit of lot 8 to the westerly limit of East Street, containing by admeasurement 1.7 acres, be the same more or less.

Parcel 7.—All that part of Simpson Street extending from the easterly limit of lot 8 to the westerly limit of East Street, containing by admeasurement 1.7 acres, be the same more or less.

Parcel 8.—All that part of the road allowance between the 12th and 13th concessions of the Township of Artemesia from the westerly limit of lot 26 to a point 7 chains east of the westerly limit of lot 26, containing by admeasurement .7 acres, be the same more or less.

W. J. Bellamy, *Clerk.*
J. R. McKenzie, *Reeve.*

RIGHT-OF-WAY

High-Tension Lines

During this year the Department has devoted its energies to the closing of purchases of the outstanding cases on the line from St. Thomas to Windsor, the acquisition of the lands required for the reservoir and other works in connection with the Eugenia Falls development (consisting of about two thousand acres) and the acquiring of title to the right-of-way involved in the construction of the additional line from Niagara Falls to Dundas.

The St. Thomas to Windsor right-of-way may now be considered as completed, the only remaining cases not being disposed of consisting of a few where the owners are not in a position to give a proper title to the lands required, and some half-dozen cases in the Township of Sandwich East where the prices asked are considered far in excess of their value. These demands will, it is expected, soon be modified and the transactions closed.

On the Niagara Falls-Dundas line the work of purchase is nearly complete, the only cases not disposed of being a few where the owners and agents of the Commission have not agreed as to the price. It is expected that these will be cleared up in a short time.

The purchase of lands at Eugenia Falls has been fully completed to the mutual satisfaction of all parties concerned.

The aim of the Right-of-Way Department in all its dealings has been to see that uniform prices compatible with local conditions shall be paid. The work has been practically completed without resort to litigation or arbitration.

The office at St. Catharines is now closed, since which time the work has been carried on from the Head Office at Toronto.

Low-Tension Lines

During the past year, approximately 100 miles of low-tension line has been completed, making it necessary for the Right-of-Way Department to deal with over 1,000 owners for tree trimming rights, pole, anchor and guy rights, etc. This work also involved the necessity of securing highway rights through various townships, all of whom have seemed anxious to work in harmony with the Commission and assist as far as possible in order that power and light may reach the most remote districts at minimum cost.

CROSSINGS

The construction of the high-tension and low-tension lines during the year rendered it necessary to secure permission for crossings over steam and electric railways, telegraph, telephone and power companies for crossings to the number of 400. In each case it is necessary to prepare applications and blue prints, and where consent is not given, these are submitted to the Railway Board for their approval, all of which necessarily entailed a very considerable amount of work. It was also found necessary to make a number of applications to the Dominion Government for river and canal crossings under the Navigable Streams Act. The Commission's plans in all cases have been approved and passed by the interested parties.

RADIAL RAILWAYS

As will be seen by reference to the Act set out on page 1 of this report, agreements were entered into, submitted and carried by various municipalities in what is known as the "North-eastern District," and legislation passed approving of such agreements.

Throughout the year a great deal of attention has been given to this subject, new legislation considered by the Commission and careful thought given to its various aspects. Detailed engineering report in this connection will be found on another page.

INSPECTION

It has been the aim of the Commission to have all public buildings in the Province, either Provincial or Federal, placed under the control of the Inspection Department as far as wiring, etc., goes. Steps are now being completed towards this end. New offices were opened on the first floor of the Temple Building, owing to the large increase of work and also to accommodate the inspection for the City of Toronto.

The records of the past year have shown a remarkably small number of accidents throughout the Province due to defective wiring, etc., and this state of affairs has been greatly improved since the taking on of this work by the Commission.

NIAGARA DEVELOPMENT SCHEME

As a result of the exhaustion of the Commission's present contract for power at Niagara Falls and the urgent need for more power owing to the rapid increase of the load, and in compliance with a resolution passed by the Ontario Hydro Municipal Association, the Board called for a careful investigation of the means and possibilities of obtaining an additional supply of power from Niagara. The outcome of this investigation, which was thorough and exhaustive from an engineering standpoint, was the formulation of a project to utilize the surplus of water still available from the Niagara River under the terms of the Boundary Waters Treaty, in such a way as to take advantage of the total difference in level between Lake Erie and Lake Ontario. This matter is now receiving the serious consideration of both Provincial and Federal authorities.

POWER FOR EASTERN DISTRICT

For the past two years negotiations have been in more or less continuous progress with a view to solving the power problem in Eastern Ontario. The efforts of the Commission in this direction have, however, been seriously hampered through not having been able up to the present time to reach what they consider to be a reasonable basis of negotiation with the private interests involved. It is now hoped that in the near future definite steps will be taken which will assure the eastern district of an ample supply of power through the Commission.

AGREEMENTS

During the fiscal year agreements for a supply of power have been made with the municipalities of Ailsa Craig, Blenheim, Bothwell, Comber, Chatsworth, Chesley, Dutton, Dundalk, Durham, Delaware, Exeter, Flesherton, Gravenhurst, Huntsville, Harriston, Holstein, Lambeth, Listowel, Lynden, Mt. Brydges, Mt.

Forest, Milverton, Niagara Falls, Orangeville, Palmerston, Petrolia, Ridgetown, Shelburne, St. George, Thamesville, Victoria Harbor and Williamsburg.

An agreement was also entered into with the Union Carbide Company for an additional supply of 8,000 h.p.

An agreement for the supply through the Toronto Hydro-Electric system of 3,000 h.p. was made with the Interurban Power Company, of Toronto.

Owing to the fact that the supply of power under contract with the Ontario Power Company had become exhausted owing to the heavy load, it became necessary during the past year to enter into a temporary contract with the Toronto Power Company for the supply of 16,000 h.p.

SECTION II

TRANSMISSION SYSTEM

STEEL TOWER TRANSMISSION LINES

Surveys

NIAGARA DUPLICATION

There was no extensive survey work on this line during the fiscal year of 1915, the main part of the work having been completed in 1914.

DUNDAS-HAMILTON

A complete survey of this line was made in 1914 and the route described in the Annual Report for that year. However, the decision of the City of Hamilton to grade certain roads and streets along which the original route was staked necessitated a new layout for practically one-half of the total length of line.

The revised location may be described as follows:—

Commencing at Dundas interswitching station the line runs in a southerly direction a distance of .71 miles to the intersection of Fifth Avenue of the McKittrick survey; it then deflects to the east along the north side of Fifth Avenue a distance of .91 miles to the intersection of Seventh Street of the McKittrick survey, and turning north follows this street a distance of .27 miles on the east side to the intersection of the production of Hunt Street, Hamilton, where it again deflects to the east along the north side of Hunt Street a distance of .964 miles to Dundurn transformer station, Hamilton. The total length of the line is 2.854 miles.

Contracts for Material

DUNDAS-HAMILTON

Tenders were asked for the supply of the different kinds of transmission line material required, and contracts were let to the following companies:—

To the Canadian Bridge Company of Walkerville, the supply of steel poles and footings.

To the Canada Wire & Cable Company of Toronto, the supply of 4/0 copper cable.

To the Canadian Porcelain Company of Hamilton, and the Ohio Brass Company of Mansfield, Ohio, the supply of insulators.

To the Steel Company of Canada, the supply of steel insulator pins.

To the Frost Wire Fence Company of Hamilton, the supply of No. 8 E.B.B. iron wire for telephone.

To the Acme Tool & Stamping Company of Hamilton, the supply of steel straps.

To the St. Mary's Cement Company of St. Mary's, the supply of cement.

To the Galt Malleable Iron Company of Galt, the supply of 6-bolt strain clamps.

U bolts, clamps, tower eyes, shims, parallel groove clamps, 5/16 in. ground wire and 6-pin cross-arms were supplied from the Hydro-Electric Power Commission stores.

Organization

NIAGARA DUPLICATION

The field organization for the year 1915 consisted of tower footing, tower assembling, tower erection, right-of-way clearing, fence, insulator and cable erection gangs on the transmission line, and a wire stringing gang on the telephone line.

DUNDAS-HAMILTON

The field organization for the Dundas-Hamilton steel pole line was similar to that of the Niagara duplication, except that a much reduced force of men was used.

Progress of Construction

NIAGARA DUPLICATION

The total length of the Niagara duplication is 50.03 miles. Work was commenced on June 23rd, 1914, and completed on February 26th, 1915.

DUNDAS-HAMILTON

The total length of the Dundas-Hamilton line is 2.854 miles. Work was commenced on this line on April 7th, 1915, and completed on September 24th, 1915.

Special Construction

On account of the new Niagara-Dundas line having copper conductors and paralleling, within 60 feet, the old line through the Dundas Valley, and this latter line having aluminum conductors, it was decided to replace this aluminum by 4/0 copper.

The work necessary to be done was to take down 10.2 wire miles of 4/0 aluminum and erect the same number of wire miles of 4/0 nineteen strand copper.

This work was commenced on February 13th, 1915, and completed March 10th.

Another piece of special construction was the stringing of aluminum conductors on the Dundas-Hamilton steel poles from Dundurn Station at Hamilton to the Cooper Brick Works, a distance of 4,732 feet. This work was done for the City of Hamilton, and consisted of erecting three No. 2/0 aluminum conductors over the full distance to supply power to the brick works, and the erection of two additional No. 2/0 aluminum conductors for a distance of 1,810 feet from Dundurn Station to be used for a lighting circuit.

This work was commenced on September 24th, 1915, and completed on October 2nd.

STATION BUILDING AND EQUIPMENT DEPARTMENT

GENERAL

Station Construction

At the time of the last Annual Report there were a number of stations under construction which have since been completed and placed in operation. These are located at Dundas, Strathroy, Central Prison Farm, Embro, Mimico, Drumbo, Ayr, Tilbury, Waubaushene, Port McNichol, Brockville and Georgetown. During the past year stations have been constructed at Dorchester, Lucan, Delaware, Burford, Dutton, Waterford, Lynden, Simcoe, Chatham, Wallaceburg, Bothwell, Thamesville, Blenheim, Dresden and Eugenia Falls, and at the present time there are fourteen stations which have been authorized this year, and on the majority of these the construction work is well advanced. These will be located at Ridgetown, Listowel, Exeter, Milverton, Palmerston, Petrolia, Niagara Falls, Owen Sound, Chesley, Chatsworth, Durham, Dundalk, Mount Forest, and South Falls.

Changes and Additions to Stations

Changes or additions of transformers, switching equipment or both, have been made to twenty or more existing stations, these being necessitated by increase of load on the station in the majority of cases, and by additional feeders being required in others. The new stations and those in which changes have been made are discussed later in this report.

Eugenia System

The Eugenia System will be placed in continuous operation within a few days, the final operating tests now being under way on the turbines, generators and transmission lines. The distributing stations at Owen Sound, Durham, Dundalk and Mount Forest will be ready to receive power when the generating station is placed in service, and the other station at Chatsworth, now under construction, will be ready for operation soon afterwards. The station at Chesley will soon be under construction.

Fuse Tests

Different types of expulsion fuses manufactured by various firms were obtained and the operating characteristics investigated at the Commission's laboratory on Strachan Avenue in order to determine the types most suitable for use in the Commission's various distributing stations. These fuses vary in voltage and capacity over a considerable range.

Photographs and oscillographs were taken at the time of the tests, and very useful information for future reference was secured.

London Railway Commission

The construction of car barns at London for the London Railway Commission is under way, the drawings and specifications having been prepared by the Commission and the contract awarded to Messrs. John Hayman & Sons, contractors, of London, with the approval of the London Railway Commission.

These car barns are approximately 102 feet by 150 feet, with provisions made at the front for suitable office quarters. There are four tracks entering the building, and under each track is provided a repair pit.

It is the intention ultimately to extend this building so that it will have a depth of 220 feet, when the number of cars warrants, and with this end in view the rear wall of the building is constructed temporarily of corrugated sheet steel, the other walls being of brick.

London and Port Stanley Railway

All sub-station equipment for supplying this railway was tested in the factory before shipment by the Commission's engineers. By July 1st sufficient apparatus was installed for operating the system, and by August 31st the installation was completed at both the Horton Street Station of the London Utilities Commission and the extension to the Commission's transformer station at St. Thomas.

Public Utilities Commission of Peterboro

At the request of the Public Utilities Commission of Peterboro, plans and specifications are being prepared for a sub-station designed to accommodate switching and protective equipment for three 44,000-volt lines with three 1,500-kv.a. three-phase transformers, space being provided for a fourth transformer.

Two thousand three hundred volt switching and metering equipment for the transformers and feeders will be included, and provision will be made for carrying all 2,300-volt feeders out of the station underground.

Administration Building

Work progressed during the entire year on construction of the Administration Building on University Avenue, and at the present time (October 31st) the building is completely enclosed; the interior work, however, will not be completed until about January, 1916.

A great deal of difficulty was encountered in securing suitable foundation for the building. It was found that at one time a ravine with a creek ran diagonally across the building site. Beneath the ravine lay an extensive bed of quick-sand. To obtain suitable foundation it was essential to sink caissons to rock surface, this being about 60 feet below the street level. The building practically stands on concrete pillars 50 feet high, twenty-four being 3 ft. 6 in. in diameter and four being 6 ft. in diameter. Owing to the difficulty in securing suitable foundations the building construction was delayed materially.

The contract, awarded to Messrs. Witchall & Son, which was referred to in the last annual report, covered excavation, concrete, brick and stone masonry, structural steel work, floors, interior partitions, in short, the structural portions of the building.

In placing other contracts the Commission endeavored to use, where suitable, material manufactured in Canada, and, where possible, by Hydro power. The following are some of the sub-contractors of Witchall & Son, who use Hydro power in the production of material supplied by them:—

Pressed brick—Inter-Provincial Brick Co., Cheltenham.
Cement—St. Marys Portland Cement Co., St. Marys.
Cut stone work—Witchall & Son, Toronto.
Gypsum partition blocks—Ebsary Co., Caledonia.
Paint—Dominion Paint Works, Walkerville.

Other contracts which were placed direct by the Commission with contractors using Hydro power are as follows:—

Sash and casement—Trussed Concrete Steel Co., Walkerville.
Plastering—R. C. Dancy, Toronto.
Marble work—Canada Glass, Mantels & Tile Co., Toronto.
Hollow steel doors and trim—A. B. Ormsby Co., Toronto.
Elevators and dumb waiter—Otis-Fensom Elevator Co., Toronto.
Radiators—Steel & Radiation, Ltd., Toronto.
Iron valves—Canadian Fairbanks-Morse, Toronto.
Pumps—Canadian Buffalo Forge, Berlin.
Door hardware—Aikenhead Hardware Co. (Canadian Yale & Towne).

Some of the other contracts placed by the Commission were:—

Fire escapes—Dominion Ornamental Iron Co.
Bronze work—Architectural Bronze & Iron Works.
Boilers—Waldon Heating Co.
Switchboard—Canadian Westinghouse Co.
Piping—G. E. B. Grinyer.
Plumbing system—Keiths, Ltd.
Plumbing fixtures—Imperial Products.
Smokestack—Toronto Iron Works.
Glazing—Toronto Plate Glass Co.

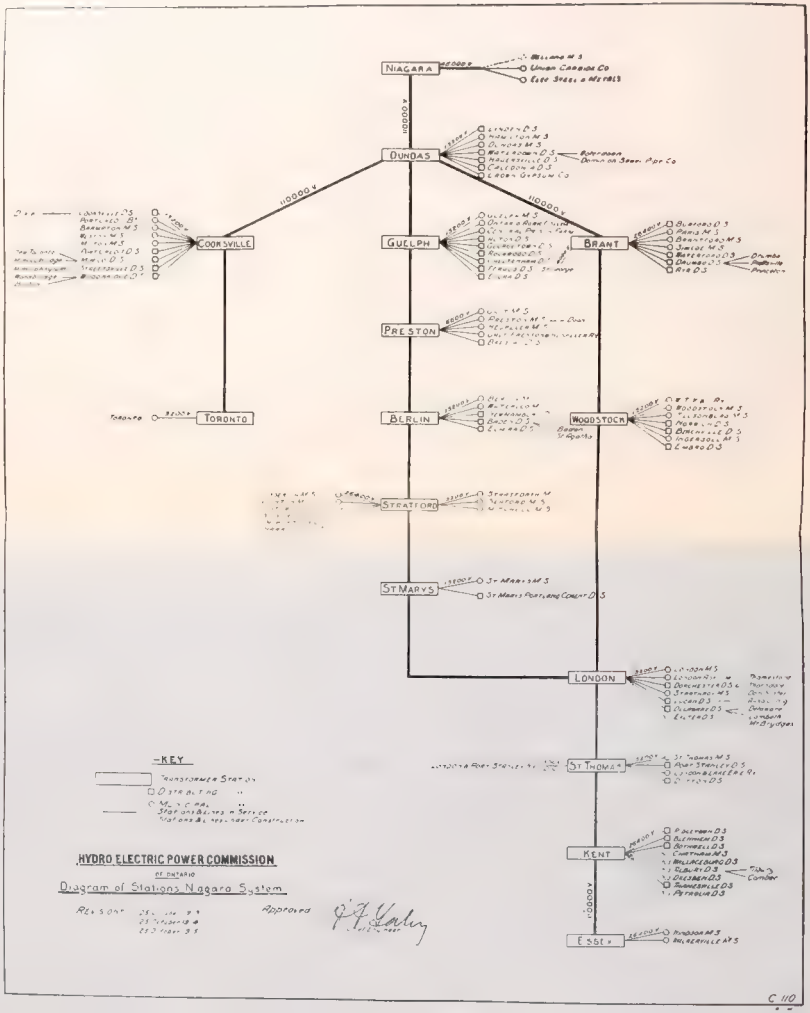
The building is rectangular in shape, with a frontage on University Avenue of 88 feet and a depth of 70 feet.

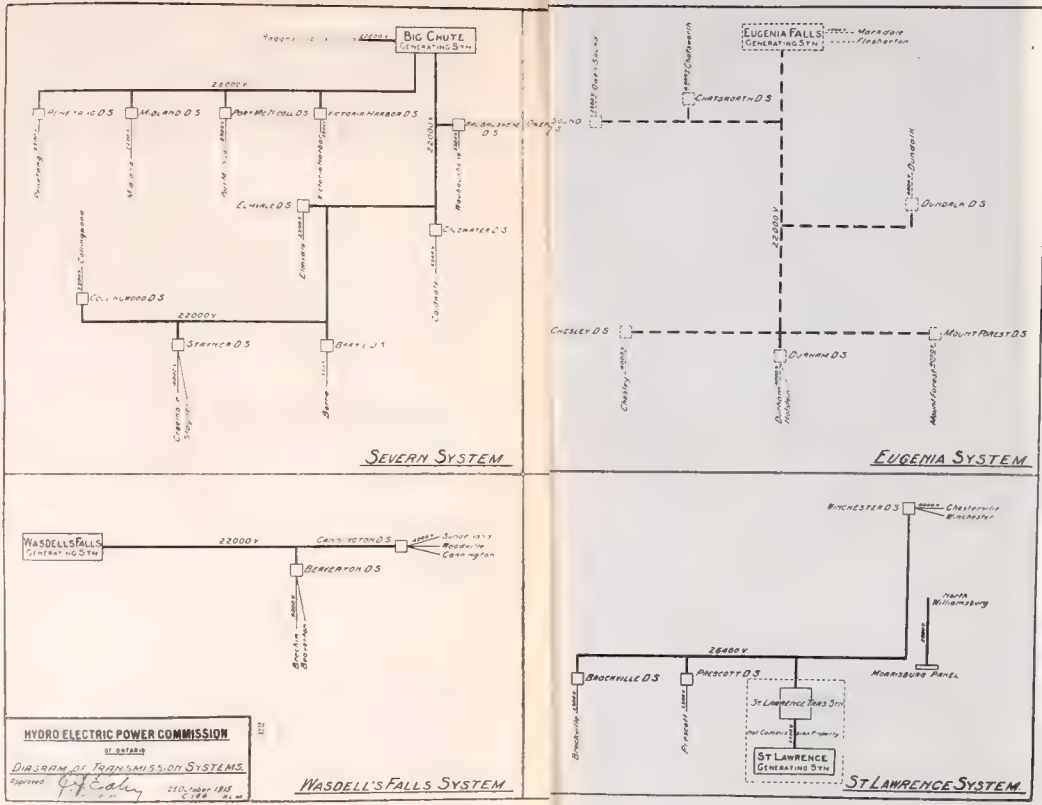
The entrance hall on the main floor will have a floor of white Renfrew and a dado of Bancroft white marble. The doors off this main hall will be of solid bronze. The stairway and elevators, which are located in interior bays, lead directly off the main hall. The balance of the main floor, excepting the toilets and a small room to be used for the telephone switchboard, will be used by the Accounting and Filing Departments. The files will be located on this floor, and files may be dispatched to any other floor by means of an electrically operated automatic dumb waiter. Elevator service will be supplied by two elevators operated by 25-cycle motors.

The second or executive floor will contain the Board Room, Chairman's and Commissioners', Chief Engineer's and Secretary's offices, also a Library and Conference Room. This floor will be finished with mahogany-finished hollow steel doors and trim and real mahogany dadoes in the Board Room and Chairman's and Commissioners' offices.

The upper floors contain Municipal, Purchasing, Operating, Railway, Hydraulic, Station Equipment and Building, Line Construction and other Departmental offices and draughting rooms. These floors are finished in Circassian walnut finished hollow steel doors and trim.

In the basement there will be a private and main dining-room, where lunch will be served for employees, also the necessary kitchen. The boiler and switchboard rooms and file and stationery storage rooms are also located in the basement.


NIAGARA
DUNDAS
COOKSVILLE
GUELPH
BRANT
PRESTON
TORONTO
BERLIN
WOODSTOCK
STRATFORD
ST MARYS
LONDON
ST THOMAS
KENT
ESSEX
KEY
HYDRO ELECTRIC POWER COMMISSION
OF ONTARIO
Diagram of Stations Niagara System
Approved
C 110


BIG CHUTE GENERATING STN
22000 V
PENETANG DS
MIDLAND DS
PORT McNICOLL DS
VICTORIA HARBOR DS
PT. BRUSHEY DS
ELMVALE DS
COLDWATER DS
COLLINGWOOD DS
STAYNER DS
BARRIE DS
SEVERN SYSTEM
EUGENIA FALLS GENERATING STN
CHATSWORTH DS
OWEN SOUND DS
DUNDALK DS
CHESLEY DS
MOUNT FOREST DS
DURHAM DS
EUGENIA SYSTEM
WASDELL'S FALLS GENERATING STN
22000 V
COBOURG DS
BEAVERTON DS
WASDELL'S FALLS SYSTEM
WINCHESTER DS
Chesterville
Winchester
North Williamsburg
26400 V
BROCKVILLE DS
PRESCOTT DS
MORRISBURG PANEL
ST LAWRENCE TRANS STN
ST LAWRENCE GENERATING STN
ST LAWRENCE SYSTEM
HYDRO ELECTRIC POWER COMMISSION
OF ONTARIO
DIAGRAM OF TRANSMISSION SYSTEMS.
Approved
Chairman
Toronto, November 1915

The heating of the building will be accomplished by a forced hot-water system. A vacuum system will also be provided, with three outlets at each floor for cleaning. Electric power for lighting and for motors in the building will be furnished by the Toronto Hydro-Electric System at 2,300 volts, which voltage will be reduced to 230 and 115 by transformers in a transformer area.

NIAGARA SYSTEM

Niagara Transformer Station

Building Extension

Partitions were erected in the south-west portion of the basement to provide storerooms for the Maintenance Department. An extension to the 12,000-volt concrete bus and switch structure was completed to provide for the switches required for Nos. 8, 9 and 10 feeders, for Nos. 6 and 7 banks of 12,000/63,500-volt transformers, and for No. 3 bank of 12,000/45,700-volt transformers. This work was done by Messrs. Wells & Gray, contractors, of Toronto.

Low-Tension Feeders

The installation of the five 300,000 c.m. lead-covered, paper-insulated cable feeders, referred to in the last report as being purchased from the Canadian British Insulated Co. and from the Standard Underground Co., was completed. These are feeders numbers 5, 6, 7, 8 and 9. No. 5 was placed in service at the end of October, 1914, No. 6 on November 3rd, 1914; No. 7 on December 22nd, 1914, No. 8 on February 10th, 1915, and No. 9 on August 31st, 1915.

It is now contemplated installing two additional feeders of armoured cable a few feet to the north of No. 2 duct line, and tenders on this material have been asked for. These cables will be 300,000 c.m., three conductor, double steel taped and with jute coating. It is proposed to bury them in the earth without the use of ducts. These will be used as complete spare feeders.

High-Tension Equipment

The 110,000-volt apparatus for No. 5 bank of 12,000/63,500-volt transformers and Nos. 3 and 4 outgoing lines has been completely installed. These two outgoing lines were placed in operation on February 28th, 1915, and No. 5 bank of transformers on November 4th, 1914.

Additional Electrical Equipment

The Canadian Westinghouse Co. were awarded, in January, 1915, the contract for No. 6 bank of 12,000/63,500-volt oil-insulated, water-cooled transformers and the necessary high-tension and low-tension switching equipment for same, for Nos. 8 and 9 feeders and also for a 110,000-volt bus sectionalizing non-automatic oil switch with disconnecting switches.

This No. 6 bank consists of three 3,500-kv-a 12,000/63,500-volt, oil-insulated water-cooled transformers supplied by No. 8 incoming 12,000-volt feeder. The equipment for the control of these feeders and this transformer bank is exactly the same as that installed for feeder No. 6 and transformer bank No. 5, and was placed in service November 4th, 1915. The 12,000-volt bus was extended and sectionalizing disconnecting switches placed between the points where No. 8 and No. 9 feeders connect in.

The 110,000-volt sectionalizing oil switch with disconnecting switches on either side was installed in the 110,000-volt bus between the points where No. 4

and No. 5 banks of transformers connect in. The transformer bank and bus sectionalizing switch above referred to was completed and placed in operation on October 12th, 1915.

Tenders were obtained and a contract was placed with the Canadian Westinghouse Co. on October 7th, 1915, for No. 7 bank of 12,000/63,500-volt oil-insulated, water-cooled transformers with the necessary switching equipment for same and for the incoming 12,000-volt feeder No. 10. It is expected that this equipment will be ready for service in the spring of 1916.

45,700-Volt Equipment

The 3,500-kv-a., 12,000/45,700-volt, oil-insulated, water-cooled transformer supplied by the Canadian General Electric Co. as a spare unit was ready for operation on August 1st, 1915.

Totalling Wattmeter

Drawings were prepared and material ordered for the installation of a Staebler & Baker totalling wattmeter in this station to measure the entire incoming power. The purchase of the meter and installation work on same was done by the Operating Department.

Additional Pumping Equipment

One 600-gallon, single-stage centrifugal pump, manufactured by the Canadian Allis-Chambers Co., and direct connected to a 50 h.p., 575-volt induction motor, manufactured by the Canadian General Electric Co., Peterboro, was installed to increase the pumping capacity for handling the water for cooling the transformers, and has been in operation since September 26th, 1915.

Heating

The installation of twenty-two 10-k.w. electric heaters in this station to replace the steam heating was completed by January, 1915, and has been in successful operation since then.

Protection of Service

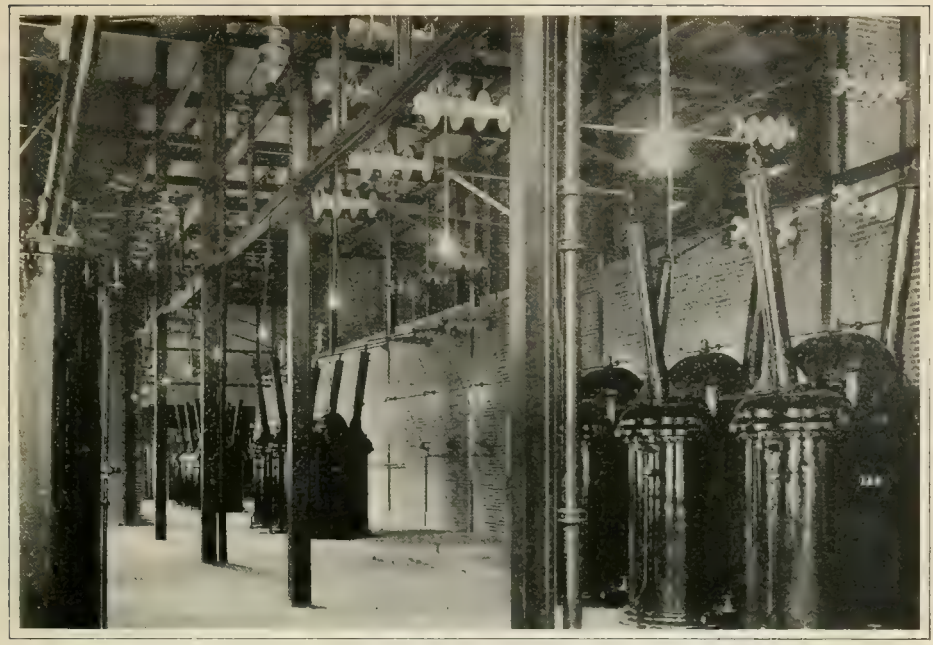
Conferences were held with the engineers of the Ontario Power Co. to discuss the installation of power-limiting reactors with the object of the betterment of the service and protection against serious damage.

The Electric Steel and Metals Company

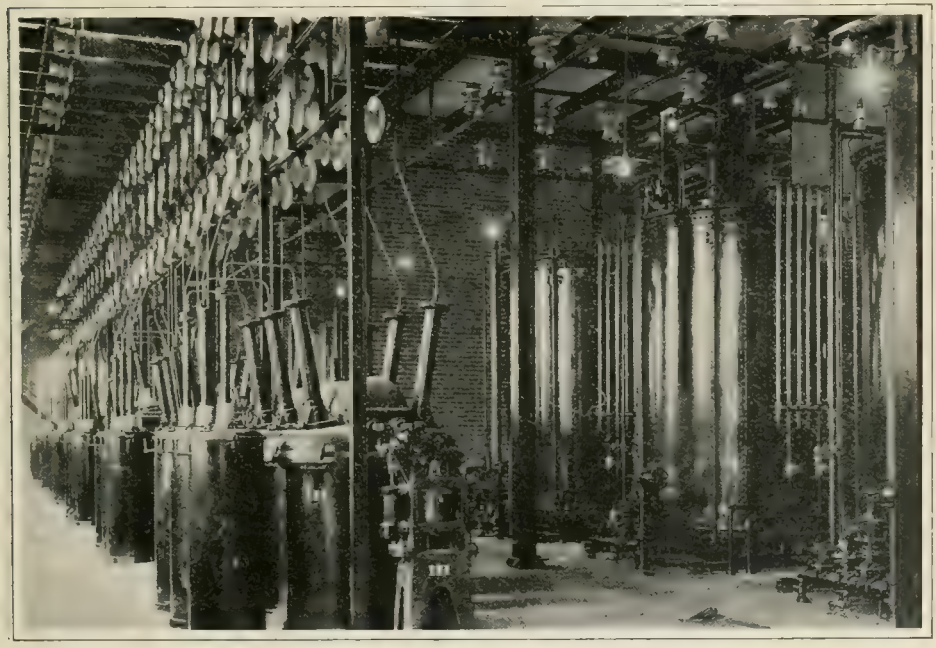
The sub-station at the plant of the Electric Steel & Metals Co. was placed in service on November 23rd, 1914.

Welland Municipal Station Extension

Three 150-kv-a 13,200/2,300-volt, single-phase, 25-cycle, oil-insulated, self-cooled transformers, manufactured by the Canadian General Electric Company, were installed in the sub-station located here, the necessary disconnecting switches, switchboard panels and wiring material purchased from the Canadian Westinghouse Company, being erected by the Commission's construction staff. This new bank of transformers operates in parallel with a bank of 3 175-kv-a., Packard Electric Company transformers, and was placed in service on April 18th, 1915.



110,000 Volt Switching Equipment—Niagara Transformer Station Extension



46,000 Volt Transformers and Switching Equipment—Niagara Transformer Station

Dundas Transformer Station

Additional Feeders

The work of installation of the two new 13,200-volt feeders referred to in the last report was completed by the Canadian Westinghouse Co. on December 19th, 1914. Pending completion of the new lines to Hamilton, these were not placed in service until October 14th, 1915.

Dundas Municipal Station

On March 14th, 1915, this station was placed in service. The construction of the building had been completed by the middle of January sufficiently for the Canadian Westinghouse Co. to proceed with their work. The apparatus belonging to the municipality in the Dundas transformer station was removed to this new station and the additional switching equipment required was purchased from the Canadian Westinghouse Co. for the municipality by the Commission. The two low-tension feeders out of this station have a maximum capacity of 300 kv-a each. These feeders, as well as supplying the town, furnish light and power to Ancaster and West Hamilton.

Waterdown Distributing Station

Owing to the falling off in the demand on the transformers in this station on account of war conditions, it was decided not to install the three 150 kv-a. transformers ordered for this station, but to leave the 3-75 kv-a. transformers in place for the present. The three 150 kv-a. transformers were disposed of to the Corporation of Welland.

Lynden Distributing Station

Instructions were received on June 28th covering the construction of a distributing station at Lynden, the primary voltage to be 13,200 volts, and the one feeder to be 100 kv-a. capacity at 4,000 volts "Y" connected with the neutral grounded, three 75 kv-a. transformers being installed for this purpose.

The contract for the building itself, which is a type E-1 station, was let to to Mr. Thos. Hull, of Lynden, and the electrical equipment was installed by the Canadian Westinghouse Co. under their contract for ten standard stations. Power was first delivered from this station on October 22nd, 1915.

Toronto Transformer Station

Transformer Equipment

The three 2,500-kv-a., single-phase 63,500/13,200-volt, oil-insulated, water-cooled transformers, manufactured by the Canadian General Electric Co. for No. 3 bank of transformers were placed in operation on November 8th, 1914. Shortly after this it was decided to install another bank of transformers (No. 4 bank), and an order was placed on February 8th, 1915, with the Canadian General Electric Co. for three transformers similar to No. 3 bank. This will give a total rated capacity of 30,000 kv-a., with one spare transformer additional. This bank will be placed in service early in November, the high-tension bus extension having been placed in service on October 24th. The switching equipment for this new bank is similar to that supplied for No. 3 bank.

Additional Equipment

Owing to the increase in the load at this station, it has been decided to install another bank of transformers (No. 5 bank), and tenders have been asked for in this connection on three 2,500-kv-a. transformers with alternative on three of the largest kv-a. rating that can be installed in the space available, this being the last bank that can be installed in the existing building.

Storage Battery

Owing to the increased demands the storage battery capacity was increased, the original battery being removed and sixty Electric Storage Battery Company's E-9 cells being installed in its stead.

The field coils of the battery-charging motor generator set were replaced by new coils so as to obtain higher charging voltage.

Control Room

The control room in this building was enclosed so as to facilitate heating, and a bridge, over the transformer runway, which forms part of the floor of the operating room, was installed. This bridge is removable to permit the transformers to be taken along the runway.

Heating Transformers

The three 100-kv-a., 13,200/230/115-volt Packard transformers, referred to in the last report as being installed for the heating system, were ready for service on February 9th, 1915.

London Transformer Station

Building Extension

The extension (1914) to this station, referred to in the last report, was completed early in May, 1915, by Messrs. Hyatt Bros., of London.

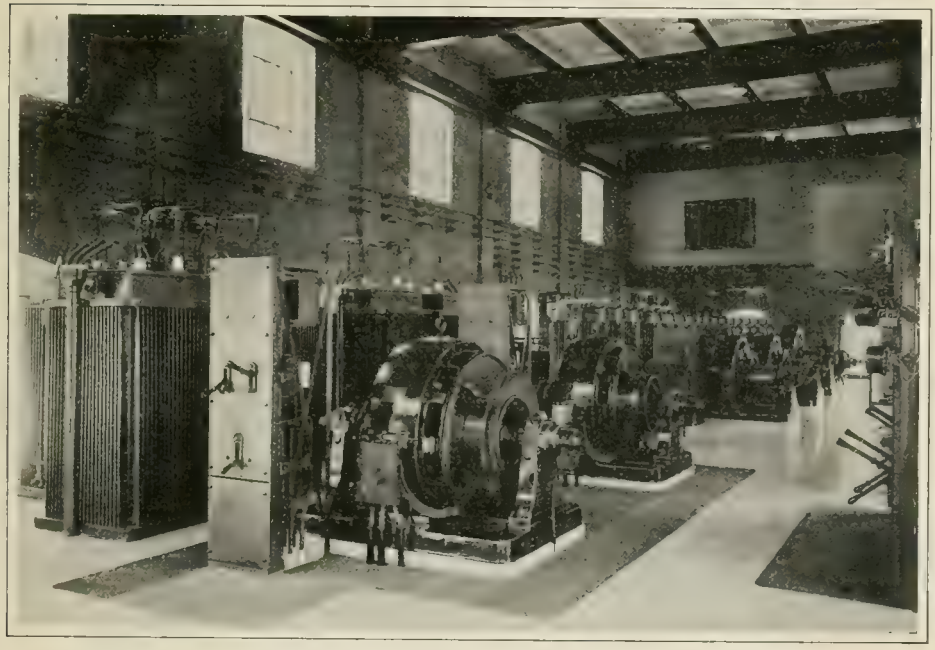
Electrical Equipment

The three 1,250-kv-a. transformers forming bank No. 2 were installed by the Canadian General Electric Company, together with the 110,000-volt switching equipment for same. The contract for the low-tension switching equipment for this bank was awarded to the Canadian General Electric Company, and this equipment, together with that ordered previously for the two additional 13,200-volt feeders, was erected by the Commission's construction force. This No. 2 bank of transformers was placed in service on October 24th, 1915.

After No. 2 bank was placed in service the 13,200-volt oil switch for the low-tension side of No. 1 bank was installed by the Commission's construction men, and the Canadian General Electric Company installed paralleling reactors for this same bank. The Commission's men also re-arranged the switchboard panels and rewired same to correspond with the arrangement of apparatus in the station.

Three 110,000-volt bus sectionalizing switches were purchased from the Canadian General Electric Company and installed by the Commission's men in the 110,000-volt bus between the points where the incoming lines from St. Mary's and Woodstock connect to the bus. These permit the two banks of transformers in this station to be connected to separate sections of the bus, giving a more flexible arrangement.

Eugenia Falls, Generating Station



London Sub-station, Horton St.—Rotary Converter Equipment

Water Supply

An investigation into the transformer cooling water supply at this station during the spring showed that the supply was not adequate to supply the demands made on it. Experiments with the drainage system were conducted and permanent changes made, resulting in a sufficient supply for cooling purposes being obtained.

Strathroy Municipal Station

The installation of the three 75-kv-a., 13,200/2,300-volt transformers and switching apparatus, and of one 20 k.w. constant current transformer by the Canadian General Electric Co. was completed and this station placed in service on November 30th, 1914. The low-tension voltage in this station is 4,000 volts for four-wire, three-phase grounded neutral distribution.

Dorchester Distributing Station

The original station located here was of pole type construction of 75-kv-a. capacity, but owing to the importance of the increasing load it was decided to replace it with a type E-1 station to supply Thamesford, Thorndale and Dorchester. A lot was purchased, and Messrs. Wells & Gray were awarded the contract for the building and instructed to proceed on March 4th, and on the 5th of April the Canadian Westinghouse Co. were notified to commence installation of the apparatus, the station being placed in service June 20th, 1915. There are three 75-kv-a., 13,200/2,300-volt transformers installed in this station. The pole type equipment which was removed is now stored at London transformer station and will be used elsewhere. There are three 4,000-volt feeders out of this station.

Lucan Distributing Station

Contract was awarded for building a type E-1 station building at Lucan to Mr. George Bawden on November 4th, 1914. The station contains three Canadian General Electric Co. 75-kv-a., 13,200/2,300-volt transformers, with one 4,000-volt outgoing feeder from this station, this switching equipment being supplied by the Canadian Westinghouse Co. Work was completed and the station placed in service on January 21st, 1915.

Ailsa Craig Feeder

An additional panel for controlling the 4,000-volt feeder to Ailsa Craig was purchased in August from the Canadian Westinghouse Co. and installation was completed by them on September 23rd, 1915.

Delaware Distributing Station

Contract was awarded for a type E-1 station on December 10th, 1914, to Messrs. Wells & Gray, the work being completed by them on January 14th, 1915. The order for the switching equipment was placed with the Canadian Westinghouse Co. on December 10th, 1914, and for the 3-25 kv-a. transformers with the Packard Electric Co. on December 14th, 1914.

The primary voltage is 13,200 volts and the secondary 4,000 volts "Y" supplying three feeders of 70-kv-a. capacity each which feed the Municipalities of Delaware, Lambeth and Mount Brydges. This station was placed in service on February 1st, 1915.

Exeter Distributing Station

Contract for the construction of this station, which is a "D-1" type, was placed with Mr. P. Bawden of Exeter on October 28th, who is proceeding with the work. Tenders have been called for on the transformers and switching equipment and are now under consideration. It is proposed to install a bank of three 75-kv-a., 26,400/2,300-volt single-phase transformers here supplying one 210-kv-a. capacity feeder with provision for an additional feeder in the future.

London Utilities Commission

London and Port Stanley Railway

The installation of the equipment purchased from the Canadian Westinghouse Co. was advanced in the Horton St. station of the London Water and Light Commission sufficiently for operation on July 1st, 1915, and the installation completed by the end of August. All equipment was inspected at the factory and tested by the Commission's engineer before shipment.

The equipment consists of six 185-kv-a., 13,200/920-volt single-phase transformers in two banks, each being fed from a 13,200-volt bus through an automatic oil switch and each being connected, on the low-tension side, through a starting panel to a 500-kw. rotary converter. The converters feed into a 1,500-volt D.C. bus from which two 2,000-ampere maximum, 1,500-volt feeders are carried. The main switchboard consists of five panels, two controlling the A.C. and D.C. sides of the converters, one for measuring on recording meters the total D.C. output, and two panels for controlling the outgoing 1,500-volt feeders. Electrolytic arresters are provided for each feeder.

The two rotary converters are each rated at 500 kw. 920-volts A.C. to 1,500-volts D.C., compound wound with commutating poles. They are self-exciting at 1,500 volts and are guaranteed to carry 200 per cent. overload for five minutes and 300 per cent. overload for one minute. They are self-starting from the A.C. end, by connecting through the starting panel to low voltage taps on the transformers.

This equipment was installed by the construction force of the London Utilities Commission under the supervision of an engineer from the manufacturers and in accordance with the Commission's specifications.

Provision is made for the future addition of one rotary converter with metering and control apparatus and 1,500-volt D.C. feeders with panels to match those already installed.

Guelph Transformer Station

The high-tension and low-tension emergency busses mentioned in the last report, and the three additional 13,200-volt feeders, were completed on March 4th, 1915.

Contract was let for the construction of a galvanized steel storage shed at this station for general storage purposes. This is being erected by the A. B. Ormsby Co. of Toronto.

Central Prison Farm

The equipment here was completely installed in the permanent sub-station on February 15th, 1915, and the station has been in continuous operation since then. Power had previously been supplied from a temporary station.

Georgetown Distributing Station

Owing to the increase in the load at this station, it was deemed advisable to increase the transformer capacity, and 3-150 kv-a. transformers originally manufactured for Etobicoke Station by the Canadian General Electric Company were installed in place of 3-75 kv-a. Canadian Westinghouse Co. transformers which were removed to Elora Distributing Station. The new transformers were placed in service on December 8th, 1914.

Fergus Distributing Station

The one 75 kv-a. transformer installed temporarily at Elora Distributing Station was returned to this station, completing the bank of 3-75 kv-a. transformers here.

Elora Distributing Station

The three Canadian Westinghouse Company transformers of 75-kv-a capacity removed from Georgetown Distributing Station, were installed in this station on December 12th, 1914. The 75-kv-a. transformer belonging to Fergus Station was transferred to that station. About this time it was decided to change this station from 2,300-volt three wire low tension to 4,000-volts four wire grounded neutral and this work was carried out and completed by the Commission on February 18th, 1915.

Preston Transformer Station

A corrugated steel storage shed was purchased from the A. B. Ormsby Company, and is being installed here for general storage purposes.

Berlin Transformer Station

Electrical Equipment

On November 9th, 1914, a contract was closed with the Canadian General Electric Company for the supply of 3-1,250-kv-a., 63,500/13,200-volt transformers to be placed in the tanks then containing three Canadian General Electric Company 750-kv-a transformers. These were installed by the Commission and placed in service on September 19th, 1915, giving the station a present transformer capacity of 6,000 kv-a.

The switching equipment for this bank of transformers ordered in 1913, together with two 13,200-volt feeders, has been finally completed.

A shed for general storage purposes has been purchased and is being erected here by the A. B. Ormsby Company. This shed is of corrugated sheet steel.

Stratford Transformer Station

Electrical Equipment

The installation of switching equipment for the 3-1,250-kv-a., 63,500/26,400-volt Canadian Westinghouse Company transformers and for four 26,400-volt feeders, was permanently completed in August, 1915. Three 13,200-volt disconnecting switches have been purchased and will be installed by the Operating Department between the 750-kv-a. transformers and the 13,200-volt bus in the old installation as soon as the new bank of transformers is placed in service.

Listowel Distributing Station

A distributing station was authorized for Listowel, and after due consideration it was decided to install the equipment in the existing Municipal Station building. The electrical equipment which will consist of 3-100-kv-a., 26,400/2,300-volt transformers with one 350-kv-a 4,000-volt feeder will be installed by the Canadian Westinghouse Company under the contract with them covering equipment for ten standard stations. Provision will be made in the station for one future feeder. Type "G" equipment will be used, modified to suit the existing building.

Milverton Distributing Station

It was decided to construct a type "H" station here and tenders were called for in connection with the building, contract being let to Messrs. Wells & Gray on October 27th. It is proposed to install three single-phase 75-kv-a., 26,400/2,300-volt transformers with one 210-kv-a 4,000-volt feeder.

Tenders have been called for covering the supply and installation of the equipment in the building.

Harriston Distributing Station

Tenders have been called for covering the erection of a type "H" building and the installation of electrical equipment. Three 75-kv-a 26,400/2,300-volt transformers with one 4,000-volt 210-kv-a. feeder will be provided. The 12 k.w. constant current transformer at present in use at Harriston will be installed in this station and provision is being made for a future 4,000-volt feeder.

Palmerston Distributing Station

A type "H" building containing 3-75-kv-a., 26,400/2,300-volt transformers and one 210-kv-a 4,000-volt feeder with the necessary switching equipment is to be constructed here. Messrs. Wells and Gray were awarded the contract for the building on October 27th, 1915, and will proceed with the work at once. Tenders are being requested on the electrical equipment.

St. Marys Transformer Station

A corrugated sheet steel shed was purchased from the A. B. Ormsby Company and will be installed here for storage purposes.

Woodstock Transformer Station

A corrugated sheet steel shed was purchased from the A. B. Ormsby Company and will be erected here. This will be used for general storage purposes.

Embro Distributing Station

The installation of apparatus in this station was completed and the station placed in service on December 22nd, 1914. The transformers which were manufactured and installed by the Canadian General Electric Company are 75-kv-a 13,200/2,300-volt units. The switching and metering equipment was supplied and installed by the Canadian Westinghouse Company.

Woodstock, Thames Valley and Ingersoll Ry.

The installation of the rotary converter, transformers, switching and metering equipment in the power house of this railway was completed and the equipment placed in operation on February 9th, 1915. Three Canadian General Electric, Type "1" electrolytic lightning arresters were also installed and placed in service on July 19th, 1915, all the above work being done for the Railway Company by the Commission's construction staff.

St. Thomas Transformer Station

Extension 1914

Plans and specifications were prepared for the construction of a 70 ft. by 45 ft. addition to the present transformer station for the accommodation of additional 13,200-volt feeders and the necessary equipment for supplying power to the London and Port Stanley Railway and also for a second bank of 750-kv-a., 63,500/13,200-volt transformers with switching equipment. This extension is added on the south end of the original building and contains a 25 ft. by 40 ft. basement and a gallery 27 ft. by 40 ft. The type of construction is the same as in the original building. The operator's room, which is 8½ ft. by 10 ft. is situated at the southeast corner of the building, on the ground floor. The contract for the construction of this building extension was let to Messrs. Hyatt Bros., London.

Railway Siding

A siding was run in from the London and Port Stanley Railway near the station and considerably reduced the cost of haulage of material.

Electrical Equipment for Railway Supply

The electrical equipment installed to supply 1,500-volt power to the London and Port Stanley Railway consists of two banks each of three 185-kv-a 13,200/920-volt transformers fed through automatic oil switches from an extension of the 13,200-volt bus; two 500-kw. rotary converters 920 volts A.C. to 1,500 volts D.C., provided with compound winding and interpoles; and three feeder equipments, two of which are in use, the third being a spare.

Bus disconnecting switches were installed between the old 13,200-volt bus and the extension and the equipment was so laid out that the second bank of 110,000-volt transformers, when installed, will connect to this extension. Provision was also made on this bus extension for two 13,200-volt outgoing future feeders and for one future bank of transformers for a future converter.

Each converter is self starting from the A.C. end and is provided with its own starting panel equipped with double throw field switch and a double throw starting switch by means of which low voltage can be applied for starting the converter. The transformer banks are controlled by automatic oil switches on the high-tension side, operated from panels in the A.C. switchboard.

The D.C. 1,500-volt switchboard consists of six panels and is in line with, but separated a few feet from, the A.C. switchboard in the extension. Each converter is connected through its own panel equipped with automatic circuit breaker, knife switch and ammeter to the 1,500-volt bus. The entire D.C. output is measured on a 1,500-volt watt-hour meter and a 1,500-volt recording watt meter mounted on a totalling panel. The three 2,000-ampere feeder panels are each equipped with ammeter and automatic circuit breaker. Electrolytic lightning arresters are connected to the outgoing feeder conductors near the wall outlets. Indi-

cating volt-meters and a reactive factor meter are mounted on a swinging bracket at one end of this switchboard.

All the above equipment was supplied by the Canadian Westinghouse Company in accordance with specifications prepared by the Commission's engineers, who inspected and tested it in the factory. It was installed by the Commission's construction force under the supervision of an engineer from the manufacturers. The first converter was started up on June 20th and the second one on July 1st.

Additional Equipment

In addition to the above equipment a contract was placed with the Canadian General Electric Company for a panel and 13,200-volt oil switch for the low-tension side of the existing 110,000-volt transformer bank. This equipment has been delivered and has been partly installed by the Commission's men. A contract was also placed with the Canadian Westinghouse Company for the 110,000-volt and 13,200-volt switching equipment for No. 2 bank of 110,000-volt transformers and will soon be ready for shipment. This equipment, when delivered, will be installed by the Commission under the manufacturer's supervision.

It is proposed to move to St. Thomas, from Guelph Transformer Station, two 750-kv-a 63,500/13,200-volt General Electric Company transformers and install them with the existing spare unit at St. Thomas to make a complete second bank of transformers, duplicates of the existing bank. This work of moving the transformers will be done by the Commission's Maintenance Department.

St. Thomas Hydro-Electric Commission Station

Plans and specifications for the construction of a new municipal station are being prepared at the present time at the request of the local Commission. This station will take the place of the present municipal station on Gas St. New power transformers will be installed and the existing equipment removed to the new station and remodelled.

Three 50-kv-a transformers, formerly installed in the Commission's Transformer Station and supplying the St. Thomas Waterworks Department, were cut out of service, the Waterworks now being supplied from the local distribution system.

Dutton Distributing Station

Contract for this station was awarded to Mr. Wm. Saunders of Dutton for the construction of a type "E-1" station building at Dutton. The equipment, which consists of one bank of 75-kv-a 13,200/2,300-volt transformers and one 140-kv-a 4,000-volt feeder was installed by the Canadian Westinghouse Company under their contract covering equipment for ten standard stations, and was placed in service on August 27th, 1915.

Cooksville Transformer Station

A corrugated sheet steel shed was purchased from the A. B. Ormsby Company and will be used for general storage purposes.

Mimico Distributing Station

The installation of the additional feeder in this station, mentioned in the last report, was finally completed on May 1st, 1915, and has been placed in operation.

Woodbridge Distributing Station

The equipment, mentioned in the last annual report as being installed, was placed in permanent service on December 2nd, 1914.

Etobicoke Distributing Station

Three 150-kv-a., 13,200/2,300-volt transformers with switching equipment for two 400-kw. 2,300-volt feeders were ordered from the Canadian General Electric Company, but, it being decided not to build this station, the transformers on completion were transferred to Georgetown, and the switching equipment is being held to our order in the factory.

Brant Transformer Station

Three 50-kv-a 220/2,200-volt Canadian Crocker-Wheeler transformers were installed in this station for feeding St. George, as described below under St. George Distributing Station.

Brantford Hydro-Electric System

Several pieces of apparatus which were purchased by the Brantford Hydro-Electric System during the year were tested by the Commission for them in the factories of the manufacturers, and reports made thereon. These included three 75-kv-a transformers, Canadian Westinghouse, one 750-kv-a, 3 phase, 26,400/4,000-volt Canadian Crocker-Wheeler Company transformer and two sets of Canadian Westinghouse Company 200 k.w. 600-volt, D.C. 750 r.p.m. interpole generators, each direct connected to a 300 h.p. 4,000-volt, 25 cycle, 750 r.p.m. synchronous motor with direct connected 3.5 k.w. 125-volt exciter.

Waterford Distributing Station

Contract for the building of a type "H" station at this place was let to Messrs. Wells & Gray. The three 75-kv-a 26,400/2,300-volt transformers and switching equipment mentioned in the last Report were installed, and ready for service on February 2nd, 1915. It was later decided to change the low-tension voltage to 4,000 volts, which was done, and the station placed in permanent operation on March 10th, 1915.

Drumbo Distributing Station

This station, which has feeders supplying Drumbo, Plattsville and Princeton, is a type "H" station, and was placed in service on December 1st, 1914. The equipment is described in the last Annual Report.

Ayr Distributing Station

This station, which supplies the Municipality of Ayr at a voltage of 4,000 was placed in service on December 1st, 1914. The equipment is described in the last Annual Report.

St. George Distributing Station

As a semi-permanent arrangement three 50-kv-a 220/2,200-volt Crocker-Wheeler Company transformers have been installed in Brant Transformer Station with switching apparatus for stepping up the voltage from the Brant Station service bus from 220 to 4,000 volts "Y" for the St. George feeder. This equipment

was ready for service on August 13th, 1915, and will be used until such time as the load at St. George warrants a station being built there.

Simcoe Municipal Station

The standard type "G" station referred to in the previous report and the electrical equipment installed by the Canadian Westinghouse Company was placed in service on March 9th, 1915. Two 15 k.w. Adams Bagnall constant current transformers with panels, purchased by the Municipal Department from A. H. Winter Joyner, Limited, were installed together with the necessary wiring material by the Commission's Construction force.

Burford Distributing Station

Contract for the construction of a type "H" station here was let to Messrs. Wells and Gray on December 9th, 1914. The electrical equipment consists of three 75-kv-a 26,400/2,300-volt transformers with one 70-kv-a 4,000-volt feeder. The contract for the supply and installation of the electrical equipment was placed with the Canadian Westinghouse Company on December 30th, 1914, and the station was ready for operation on April 15th, 1915.

Kent Transformer Station

A sprinkling tank for cooling the water for the transformer cooling system has been installed, the work being done by Messrs. Wells and Gray. This tank is built of concrete and is 40 feet square and six feet deep.

The transformers in this station were placed in service on November 1st, 1914. In order to supply temporary power to the Chatham Hydro-Electric System, pending completion of their Municipal Station, the three 100-kv-a 26,400/575-volt station transformers in this station were reconnected to deliver 4,000 volts over a temporary feeder. To supply the 575-volt circuits in the station, service transformers loaned by the Chatham Hydro-Electric System were used. This temporary 4,000-volt arrangement was placed in operation on Jan. 15, 1915, and discontinued when the new municipal station was placed in service, the two 26,400-volt feeders to this station being placed in service on Sept. 26, 1915, the other two feeders supplying different stations having been placed in service on Feb. 3 and March 3, respectively.

Chatham Hydro-Electric System

Specifications for the building of a combined office and sub-station for the Chatham Hydro-Electric System were prepared and tenders called for. These tenders were submitted to the local Commission, who awarded the contract to Mr. B. Blonde of Chatham.

The contract for the 750-kv-a power transformers was awarded to the Canadian General Electric Company, and these were inspected and tested at the factory by the Commission's Engineer. Specifications for the constant current transformers and the complete switching equipment were issued and the Canadian General Electric Company was awarded the contract for same.

Building

The building has a frontage of 43 feet and a length of 61 feet, the portion of the ground and second floors partitioned off for offices being 40 feet by 30 feet. With a view to utilizing the windows for display purposes, two large plate glass windows are placed on either side of the door, a simple design of cut stone trim around the doors and windows being utilized to improve the appearance of the front.

Electrical Equipment

The electrical equipment is located to the rear of the offices, in the basement and on the first and second floors, the area of each being about 28 feet by 40 feet. The two incoming 26,400-volt lines enter the building on the second floor and connect through choke coils, disconnecting switches, automatic oil switches with series trip relays, and another set of disconnecting switches to the 26,400-volt bus, which is sectionalized by disconnecting switches. The 26,400-volt leads to the transformers, which are on the main floor, run from the bus through disconnecting switches to the 750-kv-a., 3-phase, 26,400/4,000-volt transformers.

The 4,000-volt leads from the transformers are carried in conduit to oil switches on the switchboard. The feeder panels comprise three 3-phase, 4,000-volt, 500-kv-a. power feeders, one 3-phase, 4,000-volt, 250-kv-a. feeder to the constant current transformer bus, five single phase 28 kw. 6.6 amp., series street lighting feeders, three 4,000-volt, 3-phase, 200-kv-a. commercial lighting feeders and one service transformer feeder. Provision is made for installation in the future of the following additional feeders:—three 3-phase power feeders, one series street lighting feeder and one voltage regulator circuit. The street lighting feeders are supplied from five 28 kw. 6.6 ampere, 2,300-volt constant current transformers. The station service circuits are supplied by three 5-kv-a., 2,200/220/110-volt transformers.

This station was placed in service on September 26th, 1915.

Wallaceburg Distributing Station

Contract for the construction of this station was let to Messrs. Wells and Gray. Canadian General Electric Company transformers and Canadian Westinghouse Company high-tension arrester, and switching equipment were installed and the station placed in service on February 9th, 1915. Two constant current transformers of 10 and 16-kv-a. capacity, 6.6 ampere, 2,300-volt, with the necessary switchboard have also been installed here by the Commission for the Municipality and are now in operation.

Bothwell Distributing Station

A type "H" station building was built here, under contract, by Messrs. Wells and Gray and the Canadian Westinghouse Company, under their contract for equipment for ten standard stations, installed the electrical apparatus which consists of three 75-kv-a., 26,400/2,300-volt single-phase transformers with one 4,000-volt feeder. This station was placed in service on August 17th, 1915.

Thamesville Distributing Station

Contract for the construction of a type "H" station building was awarded to Messrs. Wells and Gray. The electrical equipment supplied and installed by the Canadian Westinghouse Company under their ten standard stations contract consists of three 75-kv-a., 26,400/2,300-volt transformers with one 100-kv-a. feeder. This station was placed in service on September 14th, 1915.

Ridgetown Distributing Station

Mr. Watson Taylor, Ridgetown, received the contract for the construction of the building for this station, which is type "H-1." The electrical equipment consisting of three 75-kv-a., 26,400/2,300-volt transformers, two 4,000-volt feeders for Ridgetown and Highgate of 140-kv-a. and 100-kv-a. capacity respectively is being

installed by the Canadian Westinghouse Company under their ten standard station contract. In addition to the above, one 22 kw., 6.6 amp., 2,300-volt constant current transformer and switchboard, with a time switch, have been purchased for the Municipality and will be installed by the Commission. The contract for the panel was awarded to Messrs. A. H. Winter Joyner, Ltd., and for the transformer to the Northern Electric Company, who are supplying an Adams-Bagnall transformer. It is expected that this station will be placed in operation very shortly.

Blenheim Distributing Station

Mr. Cookson of Blenheim received the contract for the construction of a type "H" station building, and the Canadian Westinghouse Company installed the electrical equipment as covered by their standard station contract.

This equipment consists of a 4,000-volt, 140-kv-a. feeder supplying Blenheim, three 75-kv-a., 26,400/2,300-volt transformers and was placed in service on October 20th, 1915. A 22 kw. Adams-Bagnall constant current transformer for the Municipality has been ordered from Northern Electric Company and a switchboard panel for same from Messrs. A. H. Winter Joyner, Ltd., and will be installed by the Commission in a short time.

Petrolia Distributing Station

Contract for the construction of a station building here was let to Messrs. Wells and Gray on October 27th, 1915, the station to be an enlarged type "G" to accommodate two incoming 26,400-volt lines and one bank of three 150-kv-a., 26,400/2,300-volt transformers. The 26,400-volt lines will run to a commoon bus through disconnecting switches, an oil switch being placed between this bus and the transformers. A 26,400-volt electrolytic lightning arrester will be connected to this bus. Tenders are now under consideration for this equipment. There will be four feeders belonging to the Municipality of Petrolia, one for commercial lighting, one for power and two for street lighting, controlling two 16 kw., 6.6 ampere, 2,300-volt Adams-Bagnall constant current transformers already purchased for the Municipality by the Commission. A 4,000-volt feeder will be installed to supply Wyoming.

Dresden Distributing Station

It was decided to remodel the existing municipal power-house building to house the new equipment referred to in the last annual report. This equipment was installed by the Canadian Westinghouse Company and the station was placed in service on March 31st.

A 10 kw., 6.6 ampere, 2,300-volt Adams-Bagnall constant current transformer and panel ordered from Messrs. A. H. Winter Joyner Ltd. by the Commission for the Municipality has been installed by the Commission's construction force in this station for street lighting and has been placed in service.

Tilbury Distributing Station

Mr. H. G. Wynes of Collingwood received the contract for the contruction of the building for this station. The Canadian Westinghouse Company installed the switching equipment and the Canadian General Electric Company installed the three 100-kv-a. transformers referred to in the last Annual Report. The station was placed in service on December 1st, 1914.

Essex Transformer Station

The low voltage heat, light and power circuits in this station have been completed and connected up to the various pieces of apparatus in the station.

The 2-inch pipe line from the water main on Walker Road was also completed early in the year.

Walkerville Hydro-Electric System

The installation of the wiring for the 50-kv-a., C.G.E. induction type voltage regulator and its panel was completed by the Canadian Westinghouse Company and the regulator was placed in service on February 8th, 1915.

In the last Annual Report, the names of the manufacturers who supplied the 750-kv-a. transformers to this station and to Windsor Municipal Station were interchanged. The transformers in Walkerville Municipal Station are of Canadian General Electric manufacture.

Windsor Hydro-Electric System

The 90-kv-a. induction type voltage regulator and panel were installed and placed in operation on January 31st, 1915. A third 750-kv-a., 3-phase, 26,400/4,000-volt water-cooled transformer bought from the Canadian Crocker-Wheeler Company was installed by them and will be placed in service in a short time. The Canadian Westinghouse Company were awarded the contract for the necessary additions to the switching equipment for the control of this transformer, consisting of 26,400-volt connections and disconnecting switches, 4,000-volt connections to the transformer panel, switchboard instruments and wiring to the 4,000-volt bus.

An additional set of potential transformers for the 4,000-volt bus was purchased from the Canadian Westinghouse Company for the local Commission and installed by them.

An additional 28 kw., 6.6 ampere, 2,300-volt constant current transformer was ordered for the local Commission from the Canadian Westinghouse Company together with the panel and necessary wiring material. This was installed by the manufacturer and brings the total number of these transformers installed up to 13.

In the last Annual Report the names of the manufacturers who supplied the 750-kv-a. transformers to this station and to Walkerville Municipal Station were interchanged. The Canadian Crocker-Wheeler Company were the manufacturers of the 750-kv-a. transformers in this station.

WASDELL'S FALLS SYSTEM

Wasdell's Falls Generating Station

Final acceptance tests were made on the two 400-kv-a., 2,300-volt, 60-cycle, three-phase, Swedish General Electric Company generators and their exciters on November 17, 1914, by representatives of the Swedish General Electric Company in the presence of one of the Commission's engineers.

Beaverton Distributing Station

No developments.

Cannington Distributing Station

No developments.

SEVERN SYSTEM

Barrie Distributing Station

The additional 22,000-volt switching equipment for the second incoming line purchased from the Canadian General Electric Company was installed by the Commission and placed in operation on January 11th, 1915.

Collingwood Distributing Station

The additional 22,000-volt switching equipment for the second incoming line purchased from the Canadian General Electric Company was installed by the Commission and placed in service during November, 1914.

Waubaushene Distributing Station

This station was tested out on November 12th, 1914, and placed in service the following day.

Port McNicoll Distributing Station

This station was placed in service on December 3rd, 1914.

Midland Distributing Station

Owing to the opportunity of using at Owen Sound Distributing Station the three 550-kv-a., 22,000/2,300-volt Westinghouse transformers which were in this station when it was taken over by the Commission and which were not fully loaded, tenders were called for three 150-kv-a., 22,000/2,300-volt transformers to replace them. The contract was awarded to the Canadian Maloney Company, who installed the transformers and the three 550-kv-a. transformers were removed by the Commission and shipped to Owen Sound on Oct. 9th, 1915. The necessary changes in the switching equipment for the above were made by the Commission's men.

EUGENIA SYSTEM

Eugenia Falls Generating Station

Electrical Equipment

The construction of this station is now completed and final tests are being made on the apparatus preliminary to placing the station in service.

The electrical apparatus consists of the two generators rated at 1,200 kw. at 85 per cent. power factor as described in the last Annual Report, provided with direct connected exciters each capable of exciting two generators; three 900-kv-a., 4,000/22,000-volt water-cooled transformers, three 50-kv-a., 4,000/575-volt station service transformers; two 22,000-volt outgoing feeders; two 4,000-volt outgoing feeders; and switching equipment for all of the above.

The contract for the transformers and switching equipment was awarded to the Canadian Westinghouse Company and this equipment was installed by them at the same time as the generators were installed.

There is a single 22,000-volt bus, and a single sectionalized 4,000-volt bus, both arranged for future extension. Disconnecting switches are provided between busses and oil switches.

The outgoing lines are equipped with automatic oil switches. The 22,000-volt lines are protected by electrolytic lightning arresters while multigap arresters are used on the 4,000-volt lines. The two 22,000-volt lines after passing through the wall outlets are divided at an outdoor switch structure, two circuits going to Owen Sound through Chatsworth, two going to Mount Forest through Durham, and one going to Dundalk and Chesley. The two 4,000-volt lines feed respectively the

Towns of Markdale and Flesherton. A 4,000-volt feeder runs to the 50-kv-a. station service transformers, and from the low tension side of these transformers, the station lighting, power and heating circuits are supplied through a distributing panel. These transformers also supply circuits to the surge tank and head works house for heating and lighting. A storage battery with charging motor generator set is provided to supply control current for all oil switches which are electrically operated, and for the governor motors and recording instrument control coils.

The wiring diagram for this station is shown in the attached cut.

Building

Specifications for the superstructure of the building for this station were prepared and tenders called. The contract was awarded to Mr. John Hayman, on Nov. 26th, 1914, who completed the work sufficiently for the electrical Contractor to start installation work by the first of June.

The superstructure is of red pressed brick with concrete roof supported on steel beams. The window sashes are of steel. A gallery floor is provided for the 22,000-volt switches, arresters and bus.

The building is 38 feet by 56 feet, inside dimensions, and is 31 feet high to the roof. A travelling crane of eight ton capacity was installed for handling the equipment during installation and to facilitate repairs and inspection.

Future Extension

The present building and equipment are so arranged that an extension can be made when the load on this station warrants increasing the capacity. The future equipment will include additional generators with exciters, more 22,000-volt feeders, a second bank of power transformers and switching equipment for the above, similar to that now installed.

Oil, Air and Water System

Two centrifugal pumps, bought from the Canadian Allis-Chalmers Company, of fifty gallons per minute capacity, each direct connected to a 5 h.p. Canadian General Electric Company induction motor, have been installed for water-cooling purposes. One Ingersoll Rand single-acting air compressor of 45 cubic feet free air per minute capacity for the air pressure system has also been installed. The oil storage is taken care of by the installation of two tanks of about 350 gallons capacity each, which are piped to the transformers.

Heating System

The heating is done by electric heaters at 575 volts, the heaters themselves being of 10 kw. capacity and manufactured by the Commission. Five of these heaters are located at the surge tank and three in the gate house. The generating station itself will also be heated by electric heaters suitably placed.

Markdale Municipal Section

With the authority of the Corporation of Markdale, the Commission has purchased from the Northern Electric Company a switchboard panel and a 12 kw., 6.6 ampere, 2,300-volt, 60-cycle constant current transformer of Adams-Bagnall Company manufacture. The Commission is also purchasing for the Corporation, the necessary wiring material for the installation of the above in the Markdale Town Hall, to supply the street lighting system. This equipment when delivered will be installed for the Corporation by the Commission's Construction Staff.

Owen Sound Distributing Station

Building

Messrs. Grier and Lethbridge of Owen Sound received the contract for the combined office and station building at this place. This building is 40 feet by 62 feet, with office space on the first and second floors of 38 feet by 29 feet. A basement is provided under the remainder of the building, and the first and second floors, with the exception of the space used for offices, are used for the electrical equipment.

The front of the building is finished in cut stone and brick with an entrance suiting the character of the building, a plate glass show window being placed on either side of the door. This building is located adjacent to the existing municipal generating station.

Commission's Equipment

The switching equipment, the contract for which was placed with the Canadian Westinghouse Company, consists of two incoming 22,000-volt lines which connect to a bus after passing the 22,000-volt oil switches. From this bus one feeder runs to the bank of three 550-kv-a., 22,000/2,300-volt oil insulated water-cooled transformers transferred from Midland Distributing Station and provision is made for a similar connection to a future bank of transformers. Metering equipment is provided for measuring the power at the 2,300-volt bus. All this equipment was purchased for and installed by the Commission.

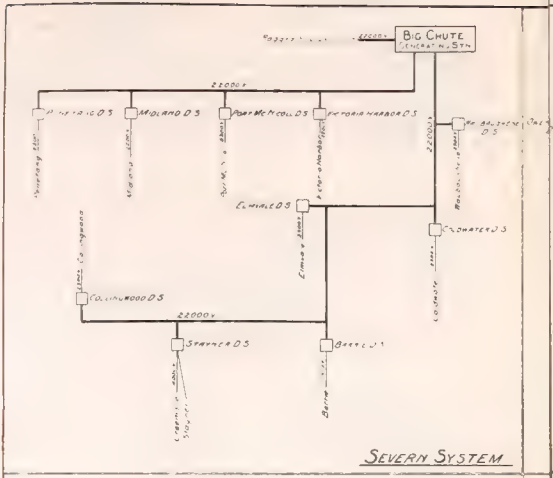
Municipal Equipment

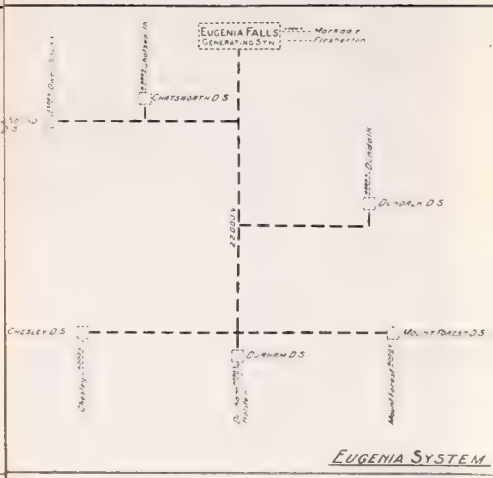
With the approval of the Corporation of Owen Sound, the Commission purchased and installed the 2,300-volt bus and the two 2,300-volt feeders, one 2,300-volt commercial lighting feeder, and one 2,300-volt street lighting feeder. This equipment was purchased from the Canadian Westinghouse Company along with the Commission's own equipment. At the request of the Corporation the Commission is moving the two existing generator panels from the generator room and mounting them in line with the new switchboard and installing new cables to connect the generators to the 2,300-volt bus, and and is also moving the existing street lighting constant current transformers and the 2,200/550-volt power transformers to the new building. All outgoing feeders will be carried out in lead-covered underground cable. The two existing generators are rated at 375-kv-a. and 400-kv-a., respectively. Provision is made for additional future feeders to be installed when required, also for the future installation of a voltage regulator and for additional constant current transformers.

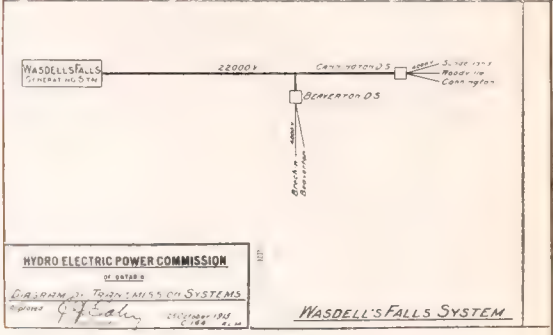
This station will be ready to be placed in operation as soon as the Eugenia system is placed in service, which will be early in November.

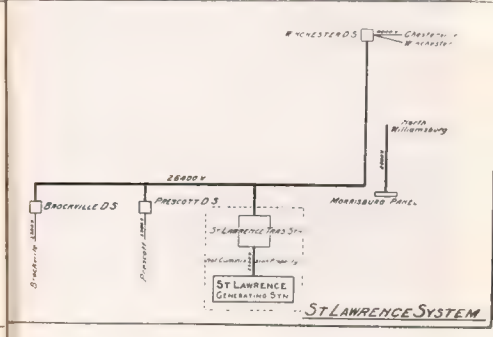
Chatsworth Distributing Station

Contract was let to Messrs. Wells and Gray for the construction of a type "H" station building here. The Canadian General Electric Company was awarded the contract for the equipment controlling a 22,000-volt incoming line supplying a bank of three 25-kv-a., 22,000/2,300-volt transformers and the necessary metering, switching and protective apparatus, for one outgoing 70-kv-a., 4,000-volt feeder. This station will be ready for service in November.


BIG CHUTE
GENERATING STN
22000 V
MIDLAND D S
PORT McNICOLL D S
VICTORIA HARBOR D S
ORILLIA D S
COLLINGWOOD D S
STAYNER D S
BARRIE D S
SEVERN SYSTEM


EUGENIA FALLS
GENERATING STN
CHATSWORTH D S
DUNDALK D S
22000 V
CHESLEY D S
DURHAM D S
EUGENIA SYSTEM


WASDELL'S FALLS
GENERATING STN
22000 V
BEAVERTON D S
HYDRO ELECTRIC POWER COMMISSION
OF ONTARIO
DIAGRAM OF TRANSMISSION SYSTEMS
DECEMBER 1958
WASDELL'S FALLS SYSTEM


WINCHESTER D S
26400 V
BROCKVILLE D S
PRESCOTT D S
MORRISBURG PANEL
ST LAWRENCE
GENERATING STN
ST LAWRENCE SYSTEM

Chesley Distributing Station

This station building will be constructed by Messrs. Wells and Gray and will be type "G." One incoming line will be provided at present but the second can be added easily when required. The electrical equipment is being manufactured by the Canadian General Electric Company and is the standard "G" station equipment. The three transformers are rated at 100-kv-a., 22,000/2,300-volts, 60 cycle. There is one 4,000-volt feeder of 280-kv-a. capacity. 22,000-volt multigap arresters are included in the equipment for this station. Construction work is just commencing on this station.

Durham Distributing Station

Contract for a type "H" station building here was placed with Messrs. Wells and Gray and that for the electrical equipment with the Canadian General Electric Company. This station has one incoming 22,000-volt line and the transformer bank is composed of three 75-kv-a., 22,000/2,300-volt, 60-cycle transformers. One outgoing 4,000-volt feeder to Durham is provided. The equipment for an additional 4,000-volt feeder to supply the Village of Holstein has been ordered and will be installed by the Canadian General Electric Company. There has also been ordered from the same Company a 10 kw., 6.6 ampere, 2,300-volt, 60-cycle constant current transformer and panel for the Corporation of Durham to supply the Durham street lighting demands. This station will be placed in service in November.

Dundalk Distributing Station

A type "H" station building was constructed here under contract by Mr. A. C. McDonnell, of Dundalk. The electrical layout is the same as for Durham, the transformers being of 75-kv-a. capacity. One 4,000-volt feeder will supply Dundalk. This station also will go into operation in November. The Canadian General Electric Company supplied and installed the electrical equipment.

Mount Forest Distributing Station

Mr. C. Patton, Mount Forest, received the contract for a type "G" station building here. The electrical equipment, which is the same as for Chesley Distributing Station, was supplied by the Canadian General Electric Company under contract. This station will be placed in operation as soon as the Eugenia System is in service. A 20 kw., 6.6 ampere, 2,300-volt, 60-cycle constant current transformer and panel has been purchased for the Corporation from the Canadian General Electric Company and is being installed by them. This will be used for street lighting purposes.

ST. LAWRENCE SYSTEM

Brockville Distributing Station

Plans were prepared for an extension to the Corporation's generating station. The work was done under the supervision of the Brockville Light and Power Department in conjunction with the Commission's construction staff.

The contract for three 200-kv-a., 26,400/2,300-volt, 60-cycle transformers had already been awarded to the Canadian General Electric Company. Tenders were called for on the switching equipment and the contract was awarded to the Canadian Westinghouse Company. The equipment provides for one incoming 26,400-volt line with provision for an additional line in the future. An electrolytic lightning arrester and type "E" hand-operated oil switch—with series I.T.L. relays—protect and control the high tension supply. The transformers are connected to the 2,300-volt bus on the existing switchboard through an automatic oil switch and

provision is made for synchronizing between the transformers and the generators in the existing power house.

The existing generating equipment consists of two three-phase, 375-kv-a., 2,300-volt, 60-cycle, Swedish General Electric Company generators direct connected to Belliss and Morcom compound steam engines of 450 h.p. rating.

Power was first supplied to Brockville through the new equipment on April 24th, the station, however, having been placed in service on April 4th for temporary supply of power, from the above generators to the Commission's St. Lawrence System pending changes being made by the Rapids Power Company at Morrisburg and Iroquois.

Williamsburg Distributing Station

Williamsburg Feeder

A standard feeder panel for supplying Williamsburg at 2,200 volts, 3-phase, 60-cycles has been installed temporarily in the Morrisburg Station of the Rapids Power Company. This was manufactured by the Canadian Westinghouse Company, and placed in service in May, the installation being done by the Commission's Operating Department.

SOUTH FALLS SYSTEM

South Falls Generating Station

The enlargement of the existing generating station on the Muskoka River at South Falls having been authorized, plans and specifications are being prepared for the necessary extension to the superstructure of the existing building and for the electrical equipment required.

At present there is one 450-kv-a. Allis-Chalmers-Bullock generator operating at 6,600 volts, 3-phase, 60-cycles, with a belted exciter and switchboard. It is proposed to purchase and install another generator rated at 750-kv-a., 3-phase, 6,600-volt, 60-cycles, for direct connection to the turbine shaft; a motor driven exciter; three 400-kv-a., 6,600/22,000-volt transformers; three 30-kv-a., 6,600/220/110-volt service transformers; the necessary switching equipment for the above and for two outgoing 22,000-volt lines and four outgoing 6,600-volt lines, and for station service feeders.

The plans will provide for a future extension of the building when load conditions require it.

Specifications on the 750-kv-a. generator and exciter have already been issued and tenders are now being considered. It is expected that the additional equipment for this station will be placed in operation during the coming spring, to supply power to Huntsville at 22,000 volts and to Bracebridge and Gravenhurst at 6,600 volts.

Huntsville Distributing Station

The construction of a distributing station at Huntsville has been authorized and the preliminary work is now being done. It is proposed to construct a modified Type "G" station and install three 300-kv-a., 22,000/2,300-volt, 60-cycle, single phase transformers with switching and protective equipment for one incoming 22,000-volt line and for two outgoing 2,300-volt feeders to Huntsville. Provision will be made for the future installation of equipment for a second incoming 22,000-volt line and for the Corporation's constant current transformers to supply their street lighting system, also for additional 2,300-volt feeders. The building will be of sufficient size to accommodate three 500-kv-a. transformers.

Table No. 1

CAPACITIES OF TRANSFORMERS INSTALLED OR ORDERED FOR COMMISSION'S STATIONS*

Total Capacity, 236,725 Kv-a.

Station	Voltage	Transformers Installed		Transformers Ordered		Total Station Capacity Kv-a.	System Capacity Kv-a.
		Mfr.	Kv-a.	Mfr.	Kv-a.		
NIAGARA SYSTEM.	25-Cycle						
1. Niagara Transformer Station	12,000—110,000	C.W.Co.	66,500	C.W. Co.	10,500		
	12,000— 45,700	C.G.E.Co.	24,500			101,500	
2. Dundas Transformer Station	110,000— 13,200	C.G.E.Co.	7,500			7,500	
Caledonia Dist. Station	13,200— 2,300	P.T.Co.	450			450	
Waterdown " "	13,200— 2,300	C.C.W.Co.	225			225	
Hagersville " "	13,200— 4,000	C.W.Co.	225			225	
Lynden " "	13,200— 4,000	C.W.Co.	225			225	
3. Toronto Transformer Station	110,000— 13,200	C.G.E.Co.	32,500			32,500	
4. London Transformer Station	110,000— 13,200	C.G.E.Co.	8,750			8,750	
Dorchester Dist. Station	13,200— 4,000	C.W.Co.	225			225	
Lucan " "	13,200— 4,000	C.G.E.Co.	225			225	
Delaware " "	13,200— 4,000	P.E.Co.	75			75	
Burford " "	26,400— 4,000	C.W.Co.	225			225	
5. Guelph Transformer Station	110,000— 13,200	C.W.Co.	3,000			3,000	
Acton Dist. Station	13,200— 2,300	S.Co. of C.	225			225	
Georgetown Dist. Station	13,200— 4,000	C.G.E.Co.	450			450	
Rockwood " "	13,200— 2,300	C.G.E.Co.	75			75	
Cheltenham " "	13,200— 575	C.G.E.Co.	225			225	
Fergus " "	13,200— 2,300	C.G.E.Co.	225			225	
Elora " "	13,200— 4,000	C.W.Co.	225			225	
6. Preston Transformer Station	110,000— 6,600	C.G.E.Co.	3,000			3,000	
Breslau Dist. Station	6,600— 2,300	C.W.Co.	225			225	
7. Berlin Transformer Station	110,000— 13,200	C.G.E.	6,000			6,000	
New Hamburg Dist. Station	13,200— 2,200	P.E.Co.	225			225	
Baden " "	13,200— 4,000	P.E.Co.	225			225	
Elmira " "	13,200— 4,000	C.W.Co.	225			225	
8. Stratford Transformer Station	110,000— 13,200	C.G.E.Co.	3,000				
	110,000— 26,400	C.W.Co.	5,000			8,000	
Listowel Dist. Station	26,400— 4,000			C.W.Co.	300	300	
Tavistock " "	13,200— 4,000			C.W.Co.	225	225	
9. St. Mary's Transformer Station	110,000— 13,200	C.G.E.Co.	3,000			3,000	
St. Mary's Cement Dist. Station	13,200— 575	C.G.E.Co.	1,500			1,500	

* Spare transformers are included.

Table No. 1—Continued

CAPACITIES OF TRANSFORMERS INSTALLED OR ORDERED FOR COMMISSION'S STATIONS*—Continued

Total Capacity, 236,725 Kv-a.

Station	Voltage	Transformers Installed		Transformers Ordered		Total Station Capacity Kv-a.	System Capacity Kv-a.
		Mfr.	Kv-a.	Mfr.	Kv-a.		
10. Woodstock Transformer Station	110,000— 13,200	C.G.E.Co.	3,000	.....	.....	3,000	
Beachville Dist. Station	13,200— 2,300	S.Co. of C.	150	.....	.....	150	
Norwich " "	13,200— 2,300	S.Co. of C.	150	.....	.....	150	
Embro " "	13,200— 4,000	C.G.E.Co.	225	.....	.....	225	
11. St. Thomas Transformer Station ...	110,000— 13,200	C.G.E.Co.	3,000	.....	.....	.....	
	13,200— 920	C.W.Co.	1,110	.....	.....	4,110	
Port Stanley Dist. Station	13,200— 2,300	S.Co. of C.	150	.....	.....	150	
Dutton Dist. Station	13,200— 4,000	C.W.Co.	225	.....	.....	225	
12. Cooksville Transformer Station	110,000— 13,200	C.G.E.Co.	5,000	.....	.....	5,000	
Mimico Dist. Station	13,200— 2,300	C.C.W.Co.	450	.....	.....	450	
Port Credit Dist. Station	13,200— 2,300	C.G.E.Co.	225	.....	.....	225	
Cooksville " "	13,200— 2,300	P.E.Co.	40	.....	.....	40	
Streetsville " "	13,200— 4,000	C.G.E.Co.	225	.....	.....	225	
Woodbridge " "	13,200— 4,000	C.G.E.Co.	225	.....	.....	225	
13. Brant Transformer Station	110,000— 26,400	C.W.Co.	5,000	.....	.....	5,000	
Waterford Dist. Station	26,400— 4,000	C.W.Co.	225	.....	.....	225	
Drumbo " "	26,400— 4,000	C.G.E.Co.	225	.....	.....	225	
Ayr " "	26,400— 4,000	C.G.E.Co.	225	.....	.....	225	
St. George " "	220— 4,000	C.C.W.Co.	150	.....	.....	150	
14. Kent Transformer Station	110,000— 26,400	C.W.Co.	5,000	.....	.....	5,000	
Wallaceburg Dist. Station	26,400— 4,000	C.G.E.Co.	450	.....	.....	450	
Tilbury " "	26,400— 4,000	C.G.E.Co.	300	.....	.....	300	
Dresden " "	26,400— 4,000	C.W.Co.	225	.....	.....	225	
Bothwell " "	26,400— 4,000	C.W.Co.	225	.....	.....	225	
Thamesville " "	26,400— 4,000	C.W.Co.	225	.....	.....	225	
Ridgetown " "	26,400— 4,000	.....	.....	C.W.Co.	225	225	
Blenheim " "	26,400— 4,000	C.W.Co.	225	.....	.....	225	
15. Essex Transformer Station	110,000— 26,400	C.W.Co.	10,000	.....	.....	10,000	
							216,350

EUGENIA SYSTEM.	60-Cycle						
Eugenia Generating Station	4,000— 22,000	C.W.Co.	2,700			2,700	
Owen Sound Dist. Station	22,000— 2,300	C.W.Co.	1,650			1,650	
Chatsworth " "	22,000— 4,000	C.G.E.Co.	75			75	
Chesley " "	22,000— 4,000			C.G.E.Co.	300	300	
Durham " "	22,000— 4,000	C.G.E.Co.	150			150	
Dundalk " "	22,000— 4,000	C.G.E.Co.	150			150	
Mount Forest " "	22,000— 4,000	C.G.E.Co.	300			300	
							5,325
SEVERN SYSTEM.	60-Cycle						
Big Chute Power House	2,300— 22,000	C.W.Co.	3,600			3,600	
Penetanguishene Dist. Station	22,000— 2,200	C.C.W.Co.	600			600	
Barrie " "	22,000— 2,300	C.G.E.Co.	700			700	
Collingwood " "	22,000— 2,300	C.G.E.Co.	750			750	
Coldwater Distributing Station	22,000— 2,300	C.G.E.Co.	225			225	
Elmvale " "	22,000— 2,300	C.W.Co.	225			225	
Stayner " "	22,000— 4,000	C.W.Co.	300			300	
Port McNicoll " "	22,000— 2,300	C.G.E.Co.	50			50	
Waubaushene " "	22,000— 2,300	C.G.E.Co.	50			50	
Midland " "	22,000— 2,300	M.E.Co.	450			450	
							6,950
WASDELL'S FALLS SYSTEM.	60-Cycle						
Generating Station	2,300— 22,000	C.W.Co.	1,050			1,050	
Beaverton Dist. Station	22,000— 4,000	C.W.Co.	300			300	
Cannington " "	22,000— 4,000	C.W.Co.	300			300	
							1,650
ST. LAWRENCE SYSTEM.	60-Cycle						
Prescott Dist. Station	26,400— 2,300	C.G.E.Co.	450			450	
Winchester " "	26,400— 2,300	C.G.E.Co.	150			150	
Brockville " "	26,400— 2,300	C.G.E.Co.	600			600	
							1,200
PORT ARTHUR SYSTEM.	60-Cycle						
Port Arthur Dist. Station	22,000— 2,200	S.Co. of C.	5,250			5,250	
							5,250

*Spare transformers are included.

Table No. 2

STATION TRANSFORMERS ORDERED FOR MUNICIPALITIES AND COMMISSION DURING FISCAL YEAR ENDING OCTOBER 31st, 1915

Station	Cycles	Voltage	Mfr.	No.	Kv-a. each	Total Kv-a.
Niagara Falls Trans. Station	25	12,000-63,500	C.W.Co.	6	3,500	21,000
Niagara Falls Dist. Station	25	13,200- 2,300	C.W.Co.	3	100	300
Welland Municipal Station	25	13,200- 2,300	C.G.E.Co.	3	150	450
Dundas Transformer Station—						
Lynden Dist. Station	25	13,200- 2,300	C.W.Co.	3	75	225
Toronto Transforming Station	25	63,500-13,200	C.G.E.Co.	3	2,500	7,500
London Transformer Station	25	63,500-13,200	C.G.E.Co.	3	1,250	3,750
Dorchester Dist. Station	25	13,200- 2,300	C.W.Co.	3	75	225
Delaware Dist. Station	25	13,200- 2,300	P.E.Co.	3	25	75
London Utilities Commission	25	13,200- 920	C.W.Co.	6	185	1,110
Guelph Transformer Station—						
Georgetown Dist. Station	25	13,200- 2.300	C.G.E.Co.	3	150	450
Berlin Transformer Station	25	63,500-13.200	C.GE.Co.	3	1,250	3,750
Stratford Transformer Station						
Listowel Dist, Station	25	26.400- 2,300	C.W.Co.	3	100	300
St. Thomas Transformer Station	25	13,200- 920	C.W.Co.	6	185	1,110
Dutton Dist. Station	25	13,200- 2.300	C.W.Co.	3	75	225
Brant Transformer Station—						
St. George Dist. Station	25	220- 2,200	C.C.W.Co.	3	50	150
Burford Dist. Station	25	26,400- 2,300	C.W. Co.	3	75	225
Kent Transformer Station—						
Chatham Municipal Station	25	26,400- 4,000	C.G.E.Co.	2	750	1,500
Bothwell Dist. Station,	25	26,400- 2,300	C.W.Co.	3	75	225
Thamesville Dist. Station	25	26,400- 2,300	C.W.Co.	3	75	225
Ridgetown Dist. Station	25	26,400- 2,300	C.W.Co.	3	75	225
Blenheim Dist. Station	25	26,400- 2,300	C.W.Co.	3	75	225
Essex Transformer Station—						
Windsor Municipal Station	25	26,400- 4,000	C.C.W.Co.	1	750	750
Eugenia Generating Station	60	4,000-22,000	C.W.Co.	3	900	2,700
	60	2.200- 550	C.W.Co.	3	50	150
Chatsworth Dist. Station,	60	22,000- 2,300	C.G.E.Co.	3	25	75
Durham Dist. Station	60	22.000- 2,300	C.G.E.Co.	3	50	150
Dundalk Dist. Station	60	22,000- 2,300	C.G.E.Co.	3	50	150
Chesley Dist. Station	60	22.000- 2,300	C.G.E.Co.	3	100	300
Mount Forest Dist. Station	60	22.000- 2,300	C.G.E.Co.	3	100	300
Midland Dist. Station	60	22,000- 2,300	M.E.Co.	3	150	450

Total Kv-a., 48,270

Table No. 3

MISCELLANEOUS EQUIPMENT ORDERED FOR MUNICIPALITIES AND COMMISSION DURING FISCAL YEAR ENDING OCTOBER 31, 1915

Station	Mfr.	Voltage	Description
Niagara Transformer Station ..	C.W. Co...	110,000; 12,000	Switching equipment for Nos. 6 and 7 banks of transformers and for Nos. 8, 9 and 10 feeders.
Welland Municipal Station ..	C.A.C. Co..	550.....	1–600 gal. centrifugal pump with 50 h.p. C.G.E. motor.
	C.W. Co...	2,300.....	Switching equipment for No. 2 transformer bank.
Toronto Transformer Station ..	C.G.E. Co.	110,000; 13,200	Switching equipment for No. 4 bank of transformers.
London Transformer Station—			
Lucan Dist. Station	C.W. Co...	4,000.....	Feeder equipment for Ailsa Craig feeder.
London Utilities Commission.	C.W. Co...	13,200; 1,500	Two 500 kw. rotary converters and switching equipment for same and for 2–1,500 volt feeders.
Georgetown	C.W. Co...	13,200; 4,000	Miscellaneous switching equipment for larger transformers.
Stratford Transformer Station—			
Listowel Dist. Station	C.W. Co...	26,400; 4,000	Complete switching equipment.
Brant Transformer Station—			
St. George Dist. Station	C.W. Co...	4,000; 220..	Complete switching equipment.
Burford Dist. Station	C.W. Co...	26,400; 4,000	Complete switching equipment.
Simcoe Municipal Station	C.W. Co...	4,000.....	Wiring material for c.c. transformers.
	A.H.W.J. .	2,300.....	2–15 kw. A.B.Co. c.c. transformers and panels.
St. Thomas Transformer Station	C.W. Co...	13,200, 920, 1,500.....	Complete switching equipment for rotary converters.
		1,500.....	2–500 kw. rotary converters.
		110,000; 13,200	Switching equipment for No. 2 bank of transformers.
	C.G.E. Co.	13,200.....	Switching equipment for No. 1 bank of transformers.
Dutton Dist. Station	C.W. Co...	26,400; 4,000	Complete switching equipment.
Kent Transformer Station—			
Bothwell Dist. Station	C.W. Co...	26,400; 4,000	Complete switching equipment.
Thamesville Dist. Station	C.W. Co...	26,400; 4,000	Complete switching equipment.
Ridgetown Dist. Station	C.W. Co...	26,400; 4,000	Complete switching equipment.
Ridgetown Corporation	N.E. Co..	2,300.....	1–22 kw. A.B.Co. c.c. transformer.
	A.H.W.J. .	2,300.....	Panel for c.c. transformer.
Blenheim Dist. Station	C.W. Co ..	26,400; 4,000	Complete switching equipment.
Blenheim Corporation	N.E. Co..	2,300.....	1–22 kw. A.B.Co. c.c. transformer.
	A.H.W.J. .	2,300.....	Panel for c.c. transformers.
Petrolia Corporation	A.H.W.J. .	2,300.....	2–16 kw. A.B.Co. c.c transformers
Chatham Municipal Station ..	C.G.E. Co.	26,400; 4,000	Complete switching equipment.
	C.G.E. Co.	2,300.....	5–28 kw. c.c. transformers.
Essex Transformer Station—			
Windsor Municipal Station ..	C.W. Co...	2,300.....	1–28 kw. c.c. transformer and panel.
	C.W. Co...	26,400; 4,000	Switching equipment for transformer No. 3.
Eugenia Generating Station ...	C.W. Co...	22,000; 4,000	Complete switching equipment.
	C.W. Co...	4,000.....	Two 1,411 kv.a. generators with exciters.
	C.A.C.Co. .	550.....	Two centrifugal pumps with motors.
	I.R. Co....	550.....	Air compressor with motor.
	N.E.I.C.. .	4,000.....	Recording wattmeters.

Table No. 3.—Continued.

Station	Mfr.	Voltage	Description
Owen Sound Dist. Station	C.W. Co...	22,000; 2,300	Switching equipment.
	C.G.E. Co.	22,000.....	Lightning arresters.
	N.E.I.C. ..	2,300.....	Recording wattmeters.
Owen Sound Corporation	C.W. Co...	2,300.....	Feeder panels.
Durham Dist. Station	C.G.E. Co.	22,000; 4,000	Complete switching equipment.
	N.E.I.C. ..	4,000.....	Recording wattmeters.
Durham Corporation	C.G.E. Co.	2,300.....	1–10 kw. c.c. transformer and panel.
Dundalk Dist. Station	C.G.E. Co.	22,000; 4,000	Complete switching equipment.
	N.E.I.C. ..	4,000.....	Recording wattmeter.
Chatsworth Dist. Station	C.G.E. Co.	22,000; 4,000	Complete switching equipment.
	N.E.I.C. ..	4,000.....	Recording wattmeter.
Mount Forest Dist. Station	C.G.E. Co.	22,000; 4,000	Complete switching equipment.
	N.E.I.C. ..	4,000.....	Recording wattmeter.
Mount Forest Corporation	C.G.E. Co.	2,300.....	1–20 kw. c.c. transformer and panel.
Chesley Dist. Station	C.G.E. Co.	22,000; 4,000	Complete switching equipment.
	N.E.I.C. ..	4,000.....	Recording wattmeter.
Markdale Corporation	N.E.Co....	2,300.....	1–12 kw. A.B.Co. c.c. transformer with panel.
Midland Dist. Station	Misc.....	2,300.....	Wiring material.
Brockville Dist. Station	C.W. Co...	26,400; 4,000	Complete switching equipment.
Williamsburg Dist. Station	C.W. Co...	2,300.....	Feeder panel.
South Falls Generating Station	C.G. E. Co.	6,600.....	1–750 kv-a., 3-phase, 60-cycle generator with 1–20 kw. exciter.
Office Building	C.W. Co...	2,300.....	3–30 kv-a., and 2–20 kv-a., 220/110 volt transformers.
	C.W. Co...	2,300; 220; 110	4 panel switchboard.
	I.R.M.C. ..	220.....	Vacuum cleaner and equipment.
	C.B.F.Co. .	220.....	2–2 h.p. water pumps.
	W. Co.....	.....	2 Spencer boilers.
	O.F.E. Co.	220.....	2 passenger elevators.
	" "	220.....	1 dumb waiter.

Mfr.	Manufacturer or Agent.
C.G.E. Co.	Canadian General Electric Co., Peterboro, Ont.
C.W. Co.	Canadian Westinghouse Co., Hamilton, Ont.
C.C.W. Co.	Canadian Crocker-Wheeler Co., St. Catharines, Ont.
M.E. Co.	Moloney Electric Co. of Canada, Windsor, Ont.
P.E. Co.	Packard Electric Co., St. Catharines, Ont.
S. Co of C.	Siemens Company of Canada, Toronto, Ont.
P.T. Co.	Pittsburgh Transformer Co., Pittsburgh, Pa.
S.U.C. Co.	Standard Underground Cable Co. of Canada, Hamilton, Ont.
G.M.G. Co.	G. M. Gest Co., Montreal, Que.
H.E. Co.	Harland Engineering Co., Toronto, Ont.
C.A.C. Co.	Canadian Allis-Chalmers Co., Toronto, Ont.
A.H.W.J.	A. H. Winter Joyner Limited, Toronto, Ont.
N.E. Co.	Northern Electric Co., Toronto, Ont.
N.E.I.C.	Niagara Electric Improvement Corporation, Buffalo, N.Y.
A.B. Co.	Adams Bagnall Electric Co., Cleveland, Ohio.
I.R.M. Co.	Invincible Renovator Manufacturing Co., Toronto.
C.B.F. Co.	Canadian Buffalo Forge Co., Berlin, Ont.
W. Co.	Waldon Co., Toronto.
O.F.E. Co.	Otis Fensom Elevator Co., Toronto.

LOW-TENSION TRANSMISSION LINES

On October 31, 1915, there were completed and under construction 1,143 miles of low-tension transmission lines, of voltages varying from 46,000 volts to 2,200 volts.

The mileage of these lines is distributed among the various systems as follows:

Niagara System—778.56 miles.
St. Lawrence System—66.35 miles.
Severn System—80.15 miles.
Wasdell's Fall System—59.44 miles.
Eugenia Falls System—132.21 miles.
Muskoka System—26.50 miles.

In the construction of these lines 7,694 miles of wire, weighing 14,969,519 lbs., and 45,627 wood poles were used.

On the transmission line poles 996 miles of single-circuit telephone line has been erected for use in operating the system.

During the year 14 gangs were employed, 3 of which, under the direction of a forestry expert, were employed solely in trimming trees. These gangs constructed 419 miles of transmission lines, as well as distributing systems in 9 towns and villages, and rural lines in 6 townships.

For the above lines 400 crossing plans were prepared and submitted to telephone and railway companies for approval.

The low-tension distributing systems were constructed by the Commission in the towns and villages of Chatsworth, Delaware, Flesherton, Durham, Mount Forest, Dundalk, Lambeth, North Williamsburg and Mount Brydges, and rural lines in the townships of East Flamboro, Toronto, Etobicoke, York, Grantham and Norwich.

Description

NIAGARA

Sec. No.	From	To	Length of pole	Span	Miles	No. of Poles
L.T.			feet	feet		
1	Dundas Sub. H.E.P.C....	Junction Pole No. 134....	40	120	2.84	134
2	Junction Pole No. 134....	Beach Pump House.....	40	120	6.34	323
3	" " No. 134....	Asylum	50	120	1.13	67
4	Berlin Sub. H.E.P.C....	Junction Pole No. 10	40	.....	.18	10
5	Junction Pole No. 10.....	Waterloo	40	120	1.64	78
6	" " No. 10.....	Berlin Corp. Station.....	45	120	.76	35
7	Berlin Sub. H.E.P.C.....	New Hamburg.....	40	120	12.27	556
8	Woodstock "	Ingersoll	40	120	9.90	455
9	" "	Junction Pole No. 508....	40	120	11.12	508
10	Junction Pole 508.....	Tillsonburg.....	40	120	10.30	467
11	" " 508.....	Norwich.....	40	120	4.59	207
12	St. Thomas Sub. H.E.P.C.	St. Thomas Corp. Station	40& 45	120	1.13	50
13	Stratford " "	Stratford "	40& 45	120	1.75	78
14	Preston " "	Junction Pole No. 99.....	45	120	2.04	99
15	Jnnction Pole No. 99....	Hespeler.....	40	120	2.08	99
16	" " 99....	Galt.....	40	120	3.75	173
17	Preston Sub. H.E.P.C....	Preston Corp. Station....	35	120	.14	11
			These poles also carry Section L.T. 35			
18	London Sub.....	Junction Pole No. 38.....	40	120	.79	38
19	Junction Pole No. 38.....	Asylum, London	45	120	1.54	70
20	" " No. 38.....	Junction Pole No. 93.....	40	120	1.22	55
21	London Sub. H.E.P.C....	London Sub. No. 1.....	40	120	3.56	178
22	Junction Pole No. 93.....	" " 1.....	40	120	1.71	96
23	" " 93.	" " 2.....	40	120	.31	20
24	London Sub. No. 1.....	Springbank	40	120	3.55	156
25	Dundas Sub. H.E.P.C....	Dundas Town.....	40& 45	120	.98	58
26	Cooksville Sub. H.E.P.C.	Port Credit L.S. Road ...	40	120	2.74	129
26a	Pt. Credit L.S. Road....	Port Credit Brick Works	45	120	.24	14
27	Cooksville Sub. H.E.P.C.	Brampton	40	120	11.24	510
			These poles also carry Section L.T. 34 Circuits			
28	Stratford Sub. H.E.P.C..	Junction Pole No. 648....	40	120	14.39	648
			These Circuits carried on Sec. L.T. 13 poles Nos. 2 to			
29	Junction Pole No. 648....	Seaforth.....	40	120	12.86	581
			Sec. L.T. 29 carries L.T. 67			
30	" " 648....	Mitchell	40	120	1.27	63
31	Guelph Sub. H.E.P.C.....	O. A. College.....	40	120	1.56	77
32	" H.E.P.C. Sub. Property.....	.....	40	120	.09	8
					18 poles on Station	
34	Cooksville Sub. H.E.P.C..	Weston.....	40	120	14.07	551
			These Circuits carried on			
35	Preston Sub. H.E.P.C....	G. P. & H. Ry.....	40	120	.12	6
			These Circuits carried on			
36	Junction Pole No. 84, Port Credit.....	Mimico (New Toronto)...	45	120	5.75	266
38	Dundas Sub. H.E.P.C....	Dom. Sewer Pipe Works.	40	120	7.35	350
39	Hamilton Asylum P.H...	Hamilton Asylum.....	35	120	.63	30
40	Junction Pole No. 260....	Waterdown	35	120	1.50	72
40a	Dom. Sewer Pipe Works.	Junction Pole No. 260....	.....	.....	1.92	.....
41	St. Thomas Sub. H.E.P.C.	Port Stanley.....	35	120	12.27	573
42	Junction Pole, Sec. L.T. 48 at Beachville	Standard White Lime Co.	.....	.....	1.00	2
			These circuits carried on Section			
43	Dundas Sub. H.E.P.C....	Jno. Bertram & Son.....	40	120	1.21	10
			These Circuits carried on Section			
45	Junct. Pole No. L.T. 8-240	Beachville	40	120	.09	3
46	St. Mary's Sub.....	St. Mary's Cement Works	40	120	2.22	80

of Lines.

SYSTEM.

Voltage	No. of Circuits	Power Cables B. & S. Gauge	Telephone Wires, B.&S. & B.W.G. Gauge	Work Commenced	Work Completed	In Operation
13,200	2	No. 1/0 Alum	10 Copper	July 13, 1910 ..	Jan. 2, 1911 ..	
"	2	1/0 "	10 "	July 13, " ..	Jan. 2, " ..	
"	1	2 "	10 "	Dec. 5, " ..	Feb. 8, " ..	
"	2	1/0 "	10 "	Aug. 25, " ..	Sept.11, 1910 ..	
"	2	1/0 "	10 "	Sept.11, " ..	Nov. 25, " ..	
"	2	1/0 "	10 "	Aug. 25, " ..	Sept.11, " ..	
"	2	2 "	10 "	Sept. 11. " ..	Jan. 2, 1911 ..	Feb. 3, 1911
"	2	1/0 "	10 "	Nov. 14, " ..	Mar. 28, " ..	
"	2	1/0 "	10 "	Jan. 2, 1911 ..	Apr. 29, " ..	
"	2	1/0 "	10 "	Jan. 2, " ..	Apr. 29, " ..	
"	1	2 "	10 "	Feb. 13, " ..	Mar. 30 " ..	
"	2	1/0 "	10 "	Dec. 14, 1910 ..	Dec. 30, 1910 ..	
"	1	2 Copper	10 "	Built by Corporation		
6,600	3	1-2Alum 2-4/0 "	10 "	Oct. 8, 1910 ..	Jan. 19, 1911 ..	
"	1	2 Alum	10 "	Oct. 8, " ..	Dec. 30, 1910 ..	
"	2	4/0 "	10 "	Oct. 8, " ..	Jan. 19, 1911 ..	
"	1	2 Copper	10 "	Built by Corporation.		
circuits to G. P. H. Railway Sub.						
13,200	2	1-3/0 Alum 1-2 "	10 Copper	Oct. 26, 1910 ..	Jan. 10, 1911 ..	
"	1	2 "	10 "	Oct. 26, " ..	Jan. 19. " ..	
"	1	3/0 "	10 "	Oct. 24, " ..	Jan. 21, " ..	
"	1	3/0 "	10 "	Oct. 20, " ..	Jan. 20, " ..	
"	2	1-3/0 " 1-1/0 "	10 "	Dec. 23, " ..	Jan. 20, " ..	
"	1	1/0 "	10 "	Dec. 23, " ..	Jan. 20, " ..	
"	1	1/0 "	10 "	Jan. 1, 1911 ..	Jan, 7, " ..	
2,200	1	400,000c.m. Alum 250,000c.m. Copper		Dec. 1, 1910 ..	Jan. 1, " ..	
13,200	2	2 Alum	10 Copper	Feb. 24, 1911 ..	July 10, " ..	
"	2	2 "	10 "	Apr. 5, " ..	July 23 " ..	
"	2	2 "	10 "	Feb. 15, " ..	May 6, " ..	
from poles No. 1 to 89—1.94 miles						
13,200	2	2 Alum	10 Copper	Apr. 6, 1911 ..	Aug. 4, 1911 ..	
24, inclusive, Sec. L.T. 28 carries L.T. 67 circuits.						
13,200	2	2 Alum	10 Copper	Mar. 25, 1911 ..	Sept.13, 1911 ..	
circuits to Seaforth Jct. Pole 1153.						
13,200	2	2 "	10 Copper	Mar. 24, 1911 ..	Aug. 3, " ..	
"	1	1/0 "	10 "	July 21, " ..	Nov. 9, " ..	
550d.c.	1	Municipal lines				
2,200a.c.	4					
13,200a.c.	3	1/0 Alum	10 "	Aug. 7, 1911 ..	Sept. 3, 1911 ..	Sept. 4, 1911
Property in all.						
13,200	2	2 Alum	8 "	Apr. 19, " ..	July 24, " ..	
Section L.T. 27 poles, 1 to 89, inclusive						
6,600	1	1/0 Alum	10 "	Mar. 13, " ..	Mar. 21, " ..	
Sections L.T, 17 poles, 1 to 11, inclusive						
13,200	1	2 Alum	8 "	Apr. 26, " ..	Feb. 29, 1912 ..	
"	1	2 "	8 "	July 21, " ..	Dec. 19, 1911 ..	Apr. 6, 1912
2,200	2	4 Copper	10 "	Sept. 26, " ..	Oct, 27, " ..	Apr. 6, "
13,200	1	2 Alum	8 "	Sept. 30, " ..	Oct. 10, " ..	Apr. 6, "
"	1	2 "	8 "	Sept. 30, " ..	Oct. 7, " ..	Mar. 1, "
"	1	2 "	8 "	Oct. 16, " ..	Mar. 8, 1912 ..	Mar. 9, "
2,200	1	2 "				
L.T. 8 poles, from Beachville pole 290 to pole 240.						
13,200	1	2 Alum	10 Copper	Dec. 1, 1911 ..	Dec. 19, 1911 ..	Dec. 21, 1911
L.T. 25 poles, 1 to 58 inclusive.—.98 miles						
13,200	1	1/0 Alum	8 Copper	June 1, 1912 ..	June 29, 1912 ..	July 17, 1912
"	1	3/0 "	8 "	July 15, " ..	Aug. 19, " ..	Sep. 7, "

Description of

NIAGARA

Sec. No.	From	To	Length of Pole	Span	Miles	No. of Poles
			feet	feet		
47	Dundas Sub	Caledonia	40	120	14.36	674
47a	Caledonia	Paris Alabastine Co			.22	
					These Circuits carried on	
48	Caledonia	Junction Pole No. 940	40	120	5.87	267
49	Junction Pole No. 940	Hagersville	40	120	3.79	176
50	" " 940	Lythmore	40	120	4.98	230
55	St. Thomas Sub. H.E.P.C.	L.L.E. Ry. Sub	40	120	1.68	88
56	Port Credit	Toronto Golf Club	30	120	3.24	11
56a	Extension from Sect. L.T. 56 on T.G.C. property				Carried on Section .90	37
57	O. A. College	Guelph Prison Farm. Pole 156	40	120	1.93	86
57a	Guelph Prison Farm	Property	40	120	.08	4
58	Guelph Prison Farm, Pole 156	Junction Pole No. 454	40	120	6.42	297
59	Junction Pole No. 454	Acton	40	120	5.82	268
60	St. Catharines	Port Dalhousie	30	120	3.18	142
61	Caledonia Sub	Caledonia			.30	
					Carried on	
62	Junction Pole L.T. 27.230.	Milton	40	120	16.65	740
63	Preston Sub	Doon Twine Mill	35	120	4.18	208
					Carried on Section	
64	Mimico Sub	Mimico Asylum			1.51	17
					Carried on Section	
65	Acton	Georgetown	40	120	9.03	411
66	Junction Pole No. 454	Rockwood	35	120	1.64	77
67	Stratford Sub. H.E.P.C.	Goderich	40	120	48.36	1,007
			Carried on Section L.T. 28 and L.T.			
68	Brant Station	Paris	40	120	3.21	152
69	" "	Brantford	40	120	6.66	320
71	Waterloo	Elmira	40	120	10.93	518
72	Preston	Breslau	40	120	6.48	293
73	Niagara Falls	Junction Pole 113	48	250	5.00	113
74	Junction Pole 113	Union Carbide Co	48	250	10.50	235
75	" 303	Electric Steel & Metal Co	48	250	1.93	45
76	Junction Pole	Crumlin Junction	35	132	5.31	218
77	Crumlin Junction	Thorndale	35	132	7.91	310
78	" "	Thamesford	35	132	6.85	281
79	Junction Pole L.T. 62-381.	Streetsville	45	120	.43	19
80	" "	Clinton	40	120	1.27	62
81	Essex Station	Jct. Pole No. 55	45	120	1.10	55
82	Jct. Pole No. 55	Windsor	45	120	2.27	102
83	Jct. Pole No. 55	Walkerville	40	120	1.30	61
84	Kent Station	Chatham	40	132	1.93	99
85	Junction Pole L.T 57-118.	Junction Pole L.T. 85-776	40	120	14.61	658
86	" " 85-776.	Elora	40	120	1.18	58
87	" " 85-776.	Fergus	35	120	1.96	94
88	Paris	Junction Pole No. 313	35-40	132	7.41	312
89	Jct. Pole L.T. 88-313	Ayr	40	120	1.20	58
90	Jct. Pole L.T. 88-313	Drumbo	35	132	6.83	284
91	Drumbo	Princeton	35	132	5.65	233
92	Drumbo	Plattsville	35	132	7.35	299
					1.00 miles carried	
93	Jct. Pole L.T. 77-388	Deller Bros	30	132	.89	48
94	Jct. Pole L.T. 65-1005	I. P. B. Co	35	132	5.08	221
95	London	Lambeth (Pole No. 462)	40	120	10.15	463
96	Lambeth (Pole No. 462)	Komoka Jct. (Pole No. 759)	40	120	6.58	298
97	Komoka Jct. (Pole No. 759)	Mt. Brydges (Pole No. 943)	40	120	4.00	184
98	Mt. Brydges (Pole No. 943)	Strathroy (Pole No. 1,368)	40	120	9.27	424
99	London	Lucan	35-40	132	19.18	783
100	Niagara Falls	Elect. Devel. Co	45	100	1.25	52

Lines—Continued

SYSTEM

Voltage	No. of Circuits	Power Cables B. & S. Gauge	Telephone Wires, B. & S. & B. W. G. Gauge	Work Commenced	Work Completed	In Operation
13,200	1	3/0 Alum	8 Copper.	May 10, 1912 ..	Sep. 18, 1912 ..	Sep. 20, 1912
2,200	1	2/0 Copper	.....	Sep. 5, " ..	Sep. 18, " ..	" 20, "
Section L.T. 49 poles.						
13,200	1	3/0 Alum	8 Copper	June 22, " ..	Sep. 18, " ..	Sep. 20, "
"	1	2 "	10 "	Feb. 28, 1913 ..	May 2, 1913 ..	Aug. 15, 1913
"	1	3/0 "	8 "	June 15, 1912 ..	Sep. 18, 1912 ..	Sep. 20, "
"	1	2 "	8 "	Aug. 9, " ..	Oct. 11, " ..	Oct. 27, "
2,200	1	6 D.B.W.P. Copper	.....	June 10, " ..	Aug. 3, " ..	Aug. 6, "
L.T. 36 poles						
2,200	1	6 "	.....	Nov. 22, " ..	Jan. 3, 1913 ..	Dec. 24, "
13,200	1	2 Alum	8 Copper	Aug. 19, " ..	Dec. 14, 1912 ..	Dec. 14, "
"	1	2 "	10 "	May 14, 1913 ..	May 19, 1913 ..	Sep. 4 "
"	1	2 "	8 "	Aug. 19, 1912 ..	Dec. 14, 1912 ..	Dec. 14, 1912
"	1	2 "	8 "	" 19, 1912 ..	Dec. 14, 1912 ..	Dec. 14, "
2,200	1	1/0 "	.....	Oct. 16, 1912 ..	Nov. 21, " ..	Nov. 17, "
"	1	4 D.B.W.P. Copper	.....	Nov. 20, 1912 ..	Nov. 30, " ..	Nov. 30, "
Section L.T. 50 poles.						
13,200	1	3/0 Alum	10	Nov. 25, 1912 ..	Mar. 13, 1913 ..	Mar. 13, 1913
6,600	1	2 "	.....	Dec. 2, 1912 ..	Apl. 11, " ..	Apl. 1, "
L.T. 17 poles, No. 1 to 11, inclusive. L.T. 35 from 11 to 17 inclusive.						
2,200	1	2 Copper	.....	Mar. 30, 1912 ..	Feb. 3, " ..	Apl. 26, "
L.T., 36 poles						
13,200	1	3/0 Alum	10	Mar. 11, 1913 ..	Aug. 1, " ..	Aug. 1, "
"	1	2 "	10 CC. Steel	May 6, 1913 ..	July 3, " ..	Aug. 1, "
26,400	2	3/0 "	"	Apr. 23, 1913 ..	June 9, 1914 ..	Dec. 23, "
29 poles, to Seaforth Junction from Stratford.						
26,400	2	3/0 Alum	10 CC. Steel	Nov. 11, 1913 ..	Jan. 2, " ..	Jan. 3, 1914
26,400	2	3/0 "	"	Dec. 15, 1913 ..	Jan. 17, " ..	Jan. 17, "
13,200	1	2 "	"	May 17, 1913 ..	Oct. 14, 1913 ..	Oct. 25, 1913
6,600	1	2 "	"	Apr. 4, 1913 ..	Dec. 23, 1913 ..	Dec. 23, 1913
46,000	3	4/0 Copper	8	Mar. 5, 1914 ..	} Steel Towers. ..	Aug. 20, 1914
46,000	3	4/0 "	8	Mar. 5, 1914 ..		Aug. 20, 1914
46,000	1	2/0 "	8	July 11, 1914 ..		Oct. 17, 1914
13,200	1	2 Alum	.....	Sept. 18, 1913 ..	May 8, 1914 ..	Jan. 27, 1914
"	1	2 "	.....	Oct. 10, 1913 ..	Feb. 6, 1914 ..	Feb. 6, "
"	1	2 "	.....	Oct. 13, 1913 ..	Jan. 19, " ..	Jan. 27, "
"	1	2 "	10 CC. Steel	Nov. 1, 1913 ..	Nov. 24, 1913 ..	Nov. 24, 1913
26,400	2	3/0 "	10 "	Sept. 20, 1913 ..	Feb. 15, 1914 ..	
26,400	4	3/0 "	10 "	July 28, 1914 ..	Sept. 6, 1914 ..	Sep. 6, 1914
"	2	3/0 "	10 "	July 31, 1914 ..	Sept. 18, 1914 ..	Sep. 18, "
"	2	3/0 "	10 "	June 2, 1914 ..	Aug. 1, 1914 ..	Sep. 6, "
"	2	2/0 "	10 "	Oct. 21, 1914 ..	Feb. 22, 1915 ..	Feb 1, 1915
13,200	1	3/0 "	10 "	June 3, 1914 ..	Oct. 17, 1914 ..	Oct. 22, 1914
"	1	3/0 "	10 "	Aug. 18, 1914 ..	Oct. 28, 1914 ..	Oct. 22, "
"	1	3/0 "	10 "	Aug. 1, 1914 ..	Oct. 13, 1914 ..	Oct. 22, "
26,400	1	1/0 "	10 "	July 21, 1914 ..	Nov. 30, 1914 ..	Dec. 1, "
"	1	1/0 "	10 "	Sept. 15, 1914 ..	Nov. 30, 1914 ..	Dec. 1, "
"	1	1/0 "	10 "	July 13, 1914 ..	Nov. 30, 1914 ..	Dec. 1, "
4,000	1	6 Copper	.....	Aug. 17, 1914 ..	Nov. 30, 1914 ..	Dec. 18, "
"	1	4 "	.....	Aug. 17, 1914 ..	Nov. 30, 1914 ..	Dec. 1, "
n L.T. 90	Poles					
4,000	1	6 "	.....	Mar. 19, 1914 ..	Mar. 19, 1915 ..	Mar. 19, 1915
13,200	1	1/0 Alum	10 CC. Steel	June 10, 1914 ..	June 31, 1914 ..	July 3, 1914
"	1	3/0 "	10 "	Sept. 1, 1914 ..	Nov. 30, 1914 ..	Nov. 30, "
"	1	3/0 "	10 "	Oct. 15, 1914 ..	Nov. 30, 1914 ..	Nov. 30, "
"	1	3/0 "	10 "	Sept. 29, 1914 ..	Nov. 30, 1914 ..	Nov. 30, "
"	1	3/0 "	10 "	Sept. 14, 1914 ..	Nov. 30, 1914 ..	Nov. 30, "
"	1	2 S.R. "	10 BWG Iron	Oct. 23, 1914 ..	Jan. 20, 1915 ..	Jan. 21, 1915
12,000	2	4/0 Copper	9 "	Oct. 27, 1915 ..	Oct. 31, 1915 ..	Oct. 31, "

Description of

NIAGARA

Sec. No.	From	To	Length of Pole.	Span.	Miles	No. of Poles
			feet	feet		
101	Kent Stat. Pole No. 40...	Tilbury.....	30	132	16.91	85
					15.00 miles carried	
102	Kent Station.....	Junction No. 68	40	120	1.48	68
102a	Kent Station	Junction Pole No. 68.....	.....	.....	1.48	.....
102b	Kent Station	Junction Pole No. 68.....	.....	.....	1.48	.....
103	Junction Pole L.T. 102-68.	Junction Pole No. 519....	40	120	9.98	451
103a	Junction Pole L.T. 102-68.	Junction Pole No. 519....	.....	.....	9.98	.....
104	Junction Pole L.T. 103-519	Wallaceburg	40	120	8.50	386
105	Junction Pole L.T. 103-519	Dresden.....	40	120	7.40	309
106	Junction Pole L.T. 8-289 ..	Embro.....	35	132	6.10	254
107	Junction Pole L.T. 34-564 .	Woodbridge	35	132	6.44	277
108	Woodbridge	Bolton.....	35–40	132	13.03	540
109	Junction Pole	N. T. & I. Ry.....	.....	.....	.02	2
110	Mimico Sub-Staton	Prison Brick Yard.....	30	125	.71	32
111	Brant Sub-Station.....	Junction Pole L.T. 111-249	35–40	132	5.84	249
112	Junction Pole L.T. 111-249	Burford.....	35	132	3.48	142
113	Junction Pole L.T. 111-249	Waterford	35–40	132	14.20	616
114	Waterford	Simcoe	35	132	8.90	366
115	Tilbury.....	Comber.....	30	132	7.26	306
116	Deleware Sub-Station ...	Lambeth	40	120	6.58	.....
					Carried on	
117	" Junc. Pole 759,.	Mount Brydges	40	120	4.60	.....
					Carried on	
118	Bertram's Sub-Station, Pole No. 69-L.T. 43....	Dundas	55	.....	.37	21
119	Junction Pole L. T. 96-759	Deleware Sub-Station ...	55	120	.09	5
					Lambeth & Mt. Brydges	
120	.....	.....	.....	.....	.....	.....
121	St. Thomas.....	Dutton	30	132	18.50	756
123	Junction Pole L.T. 102-68	Thamesville	35	132	14.60	683
124	Junction Pole L.T. 123-676	Bothwell	35	132	9.83	410
125	Stratford.....	Tavistock	35	132	e10.10	450
126	Junction Pole L.T. 102-68	Blenheim	35	132	9.52	390
127	Junction Pole L.T. 123-469	Ridgetown.....	35	132	8.02	333
128	Brant	St. George	30	132	e 9.25	342
					4.50 miles carried	
129	Dundas	Lynden	35	132	e 9.75	420
130	Lucan	Ailsa Craig	30	132	e 9.50	390
131	Dresden	Petrolia	35—40	125	e24.00	1,010
132	.....	.....	.....	.....	.....	.....
133	.....	.....	.....	.....	.....	.....
134	.....	.....	.....	.....	.....	.....
135	.....	.....	.....	.....	.....	.....
137	.....	.....	.....	.....	.....	.....
138	Sebringville Junction Pole L.T. 67-311	Milverton Junction Pole .	35	132	e12.50	510
139	Milverton Junction Pole .	Milverton.....	35	132	e 1.25	48
140	" "	Listowel Junction Pole ..	35	132	e13.00	540
141	Listowel Junction Pole ..	Listowel....	35	132	e 2.50	103
142	" "	Palmerston	35	132	e10.00	415
143	Palmerston	Harriston	35	132	e 7.00	290

"e" Estimate mileage under construction.

Lines—Continued

SYSTEM

Voltage.	No. of Circuits	Power Cable B. & S. Gauge	Telephone Wires, B. & S. & B. W. G. Gauge	Work Commenced	Work Completed	In Operation
26,400	1	2 S.R. Alum	10 BWG Iron	Jan. 13, 1915....	May 12, 1915....	Mar. 3, 1915
on H.T. Telephone Poles						
26,400	1	1/0 "	10 "	Oct. 28, 1914....	Feb. 3, "	Feb. 3, "
"	1	3/0 "	.....	June 22, 1915....	June 29, "	June 29, "
"	1	3/0 "	.....	Oct. 7, "	Oct. 13, "	Oct. 13, "
"	1	1/0 "	10 BWG Iron	Oct. 30, 1914....	Feb. 3, "	Feb. 3, "
"	2	3/0 "	.....	Oct. 12, 1915....		
"	1	1/0 "	10 BWG Iron	Nov. 6, 1914....	Feb. 3, "	Feb. 3, "
"	2	3/0 "	10 "	Nov. 3, "	May 1, "	Mar. 30, "
13,200	1	1/0 "	10 "	Oct. 1, "	Dec. 24, 1914....	Dec. 22, 1914
"	1	1/0 "	10 "	Sept. 25, "	Oct. 21, "	Dec. 2, "
"	1	3/0 "	10 "	Oct. 20, "	Nov. 26, "	Jan. 26, 1915
"	1	2 "	10 "	Sep. 12, "	Sep. 12, "	Sep. 13, 1914
2,200	1	2/0 Copper	.....	Oct. 24, "	Feb. 17, 1915....	Feb. 17, 1915
26,400	1	2 S.R. Alum	10 BWG Iron	Nov. 6, "	May 4, "	May 6, "
"	1	2 S.R. "	10 "	Nov. 21, "	May 28, "	May 6, "
"	1	2 S.R. "	10 "	Nov. 21, "	May 5, "	May 10, "
"	1	2 S.R. "	10 "	Nov. 26, "	May 7, "	May 9, "
4,000	1	1/0 Copper	.....	Jan. 14, 1915....	May 8, "	Apr. 20, "
"	1	6 Copper	.....	Jan. 25, "	Mar. 12, "	Mar. 15, "
L.T. 96 poles						
4,000	1	6 B.H.D.	.....	Jan. 7, "	Jan. 23, "	Mar. 1, "
L.T. 97 poles						
13,200	1	1/0 Alum	10 "	Feb. 25, "	Mar. 15, "	Mar. 15, "
"	1	3/0 "	10 "	Jan. 27, "	Mar. 9, "	Feb. 1, "
4,000 v. circuit carried on L.T. 119 poles						
.....	.....	.....	.....	.....	.....	
13,200	1	1/0 Alum	.....	May 3, "	Aug. 21, "	Aug. 27, "
26,400	1	1/0 "	9 BWG. Iron	May 18, "	July 14, "	Sept. 14, "
"	1	2 S.R. Alum	9 "	June 26, "	Aug. 17, "	Aug. 17, "
"	1	2 "	9 "	Sept. 9, "		
"	1	2 "	9 "	July 2, "	Oct. 7, "	Oct. 20, "
"	1	2 "	9 "	June 24, "	Sept. 7, "	Nov. 24, "
4,000	1	2 "	9 "	July 1, "	Aug. 17, "	Aug. 17, "
H.T. Tel. and Railway line						
13,200	1	2 S.R. Alum	9 "	July 24, "	Oct. 15, "	Oct. 22, "
4,000	1	2 S.R. "	.....	July 28, "		
26,400	2	3/0 "	9 BWG. Iron	Aug. 30, "		
.....	.....	.....	.....	.....		
.....	.....	.....	.....	.....		
.....	.....	.....	.....	.....		
.....	.....	.....	.....	.....		
.....	.....	.....	.....	.....		
26,400	1	1/0 S.R. Alum	9 BWG. Iron	Sept. 20, 1915....		
"	1	2 "	9 "	Oct. 15, "		
"	1	1/0 "	9 "	Oct. 13, "		
"	1	2 "	9 "			
"	1	1/0 "	9 "	Oct. 14, "		
"	1	1/0 "	9 "	.....		

Description of

SEVERN

Sec. No.	From	To	Length of pole	Span	Miles	No. of Poles
S.L.			feet	feet		
1	Waubaushene (S.R. & P. Co.)	Jct. Pole (Coldwater)	40	120	4.29	193
2	Jct. Pole (Coldwater)	Coldwater Sub-Station	40	120	1.16	55
3	" " "	Jct. Pole (Elmvale)	40	120	15.86	710
4	" " (Elmvale)	Elmvale Sub-Station	40	120	.42	19
5	" " "	Jct. Pole (Phelpston)	40	120	4.55	207
6	" " (Phelpston)	Barrie Sub-Station	40	120	12.27	550
7	" " "	Jct. Pole (Stayner)	40	120	15.07	675
8	" " (Stayner)	Stayner Sub-Station	40	120	1.50	68
9	" " "	Collingwood Sub-Station.	40	120	11.86	530
10	Stayner	Creemore	35	120	7.67	348
15	Jct. Pole L.T. 37	Port McNicoll			1.00	51
L.T.						
37	Midland (S. R. & P. Co.)	Penetang Sub-Station	40	120	4.50	223

ST.L. ST. LAWRENCE

1	Morrisburg	Prescott	40	120	22.96	1,083
2	"	Winchester	40	120	16.29	747
3	Winchester	Chesterville	40	120	6.52	294
5	Prescott	Brockville	40	120	14.08	639
6	Morrisburg	North Williamsburg			6.50	
	This Circuit carried on St. L. 2 poles.					

WASDELL'S FALLS

W.L.						
1	Wasdell's Falls	Jct. No. 1	40	120	25.50	1,203
2	Jct. No. 1	Beaverton	40	120	1.47	70
3	Jct. No. 1	Cannington	40	120	9.67	442
4	Beaverton	Gamebridge			6.50	
	Carried on Sec. W.L. 1 & 2 poles					
5	Gamebridge	Brechin			3.75	
	Carried on Sec. W.L. 1 poles					
6	Cannington	Woodville	30	120	5.15	147
7	Cannington	Sunderland	30	120	7.40	335

EUGENIA FALLS

EFL			feet	feet		
1	Eugenia Falls Pwr. House	Chatsworth Sub-Station.	40	125	22.15	972
2	Chatsworth Sub-Station.	Owen Sound	40	125	9.22	394
3	Eugenia Falls Pwr. House	Flesherton Junction Pole No. 296	40	125	6.78	296
4	Flesherton Junction Pole No. 296	Durham	40	125	15.97	687
5	Durham	Mount Forest	40	125	15.70	692
7	Durham	Hanover Junction Pole	40	125	e11.50	525
8	Hanover Junction Pole	Chesley	40	125	e12.00	
9	Flesherton Junction Pole No. 296	Dundalk	40	125	11.73	500
10	Dundalk	Shelbourne	40	125	13.16	562
12	Eugenia Falls Pwr. House	Markdale			e 6.50	Carried on
13	Eugenia Falls Pwr. House	Flesherton			e 7.50	Carried on
14	Durham	Holstein				Carried on

MUSKOKA

M L.						
1	South Falls	Huntsville	35	132	e26.50	1,087

"e" Estimate mileage under construction.

Lines.—Continued.

SYSTEM

Voltage	No. of Circuits	Power Cable B. & S. Gauge	Telephone Wires B. & S. Gauge	Work Commenced	Work Completed	In Operation
22,000	2	4/0 Alum	10 CC.Steel	Sep. 20, 1912 ..	Feb. 18, 1913 ..	Feb. 24, 1913
"	1	2 "	"	Sep. 20, " ..	Feb. 18, " ..	Feb. 24, "
"	2	4/0 "	"	Sep. 25, " ..	Feb. 18, " ..	Feb. 24, "
"	1	2 "	"	Feb. 1, 1913 ..	May 17, " ..	May 27, "
"	2	4/0 "	"	Oct. 20. 1912 ..	Feb. 18, " ..	Feb. 24, "
"	2	2/0 "	"	Nov. 6, " ..	Apl. 5, " ..	April 6, "
"	2	3/0 "	"	Oct. 23, " ..	Feb. 18, " ..	Feb. 24, "
"	1	2 "	"	Jan. 24, 1913 ..	Apl. 26, " ..	Sep. 25, "
"	2	3/0 "	"	Nov. 1, 1912 ..	Feb. 18, " ..	Feb. 24, "
4,000	1	1/0 "	.....	Aug. 15, 1914 ..	Oct. 25, 1914 ..	Oct. 21, 1914
22,000	1	1/0 "	10 "	Oct. 15, " ..	Dec. 25, " ..	Dec. 24, "
"	1	2 "	10 CC.Steel	June 7, 1911 ..	July 18, 1911 ..	July 18, 1911

SYSTEM

264,00	1	3/0 Alum	10 CC.Steel	Oct. 29, 1912 ..	June 14, 1912 ..	Oct. 23, 1913
"	1	3/0 "	"	June 4, 1913 ..	Dec. 15, 1913 ..	Dec. 18, "
"	1	3/0 "	"	Sept. 6, " ..	Feb. 17, 1914 ..	Feb. 7, 1914
"	1	3/0 "	"	Oct. 16. 1914 ..	Mar. 20, 1915 ..	Apr, 4, 1915
2,200	1	6 Copper	.....	Feb. 22, 1915 ..	" "	Mar. 20, "

SYSTEM

22,000	1	1/0 Alum	10 CC.Steel	Jan. 17, 1914 ..	Sept.28, 1914 ..	Sep. 28, 1914
"	1	1/0 "	"	Mar. 30, " ..	" ..	Sep. 28, "
"	1	1/0 "	"	Feb. 18, " ..	" ..	Sep. 28, "
4,000	1	1/0 "	.....	May 2, " ..	.....	Oct. 6, "
4,000	1	1/0 "	.....	July 25, " ..	.....	Oct. 6, "
4,000	1	1/0 "	.....	May 19, " ..	.....	Oct. 19, "
4,000	1	1/0 "	.....	June 1, " ..	July 10, 1914 ..	Oct. 19, "

SYSTEM

22.000	2	3/0 Alum	9 Galv. BWG. Iron	Mar. 17,1915....	July 7, 1915....	Nov. 18, 1915
"	2	3/0 "	9 "	Apr. 7, "	Sept. 24. "	" "
"	2	3/0 "	9 "	Apr. 10, "	July 21, "	" "
"	2	3/0 "	9 "	Apr. 13, "	July 11, "	" "
"	2	3/0 "	9 "	Apr. 26, "	Aug. 25, "	" "
"	1	3/0 "	9 "			
"	1	3/0 "	9 "			
"	1	1/0 "	9 "	May 20, "	Aug. 14, "	" "
"	1	1/0 "	9 "	June 9, "	Aug. 24, "	" "
4,000 EFL 1 Poles	1	2 S.R. Alum				
4,000 EFL 3 Poles	1	2 "	.....	June 4, "	Aug. 16, "	" "
4,000 EFL 5 Poles	1	2 "				

SYSTEM

22,000	1	2 S.R. Alum	9 Galv. BWG. Iron	Aug. 6, 1915....		

The mileage of lines tabulated according to voltage and number of circuits is as follows:

—	Single Circuit Totals			Double Circuit Totals			Three Circuit Totals			Four Circuit Totals			1-2-3-4-Circuit Totals		
Voltage	Completed to Oct. 31, 1914	Completed Oct. 31, 1914 to Oct. 31, 1915	Under Construction to Oct. 31, 1915	Completed to Oct. 31, 1914	Completed Oct. 31, 1914 to Oct. 31, 1915	Under Construction to Oct. 31, 1915	Completed to Oct. 31, 1914	Completed Oct. 31, 1914 to Oct. 31, 1915	Under Construction to Oct. 31, 1915	Completed to Oct. 31, 1914	Completed Oct. 31, 1914 to Oct. 31, 1915	Under Construction to Oct. 31, 1915	Completed to Oct. 31, 1914	Completed Oct. 31, 1914 to Oct. 31, 1915	Under Construction to Oct. 31, 1915
46.000	1.93						15.50						17.43		
26.400		126.70	56.35	63.07	9.33	24.00				1.10			64.17	136.03	80.35
22.000	89.99	39.97	50.00	63.90	69.82								153.89	109.79	50.00
13.200	184.40	97.02		115.79			.09						300.28	97.02	
12.000		1.25												1.25	
6.600	13.00			3.75			2.04						18.79		
4.000	30.47	48.48	16.00										30.47	48.48	16.00
2.200	11.42	7.21		.63									12.05	7.21	
Total	331.21	320.63	122.35	247.14	79.15	24.00	17.63			1.10			597.08	399.78	146.35

Total under construction for 1914, but completed in 1915.....126.82
Plus Circuits completed in 1915.....272.96

Total.....399.78

Total Mileage of Lines and Number of Poles

—	To Oct. 31st, 1914	Oct. 31st, 1914, to Oct. 31st, 1915	Total to Oct. 31st, 1915
Total mileage low tension lines	723.90	419.31	1,143.21
Total mileage low tension lines completed	597.08	272.96	870.04
Total mileage low tension lines under construction	126.82	146.35	273.17
Total mileage single circuit lines	456.10	316.84	772.94
Total mileage double circuit lines	249.07	102.47	351.54
Total mileage three circuit lines	17.63	.....	17.63
Total mileage four circuit lines	1.10	.....	1.10
Total mileage telephone lines complete	531.03	334.84	865.87
Total mileage telephone lines under construction	.....	130.35	130.35
Number of poles	29,698	15,929	45,627

Total Weights and Mileages of Cable and Wire

Cable and Wire	Wire Miles				Weight in Pounds			
	Complete to Oct. 31st, 1914	Complete Oct. 31st, 1914 to Oct. 31st, 1915	Under construction to Oct. 31st, 1915	Completed and under construction to Oct. 31st, 1915	Complete to Oct. 31st, 1914	Completed Oct. 31st, 1914 to Oct. 31st, 1915	Under construction to Oct. 31st, 1915	Completed and under construction to Oct. 31st, 1915
Aluminum	2,479.53	1,017.84	214.50	3,711.87	1,553,414	762,452	182,265	2,498,132
Steel Reinforced Aluminum	.....	367.14	296.55	663.69	.....	378,218	151,564	529,783
Copper Wire	122.31	120.57	.....	242.88	360,531	118,194	.....	478,726
Copper Clad Steel Wire	1,062.06	124.90	.....	1,186.96	1,862,111	196,027	.....	2,058,138
Galv. Iron Wire	.....	544.78	260.70	805.48	.....	1,572,570	818,326	2,390,896
Galv. Steel Cable	578.05	365.24	139.85	1,083.14	3,754,088	2,372,015	887,742	7,013,845
Totals	4,241.95	2,540.47	911.60	7,694.02	7,530,144	5,399,476	2,039,897	14,969,519

Gauge, Length and Weight of Copper Clad Steel and Galvanized Iron Wire

Gauge	Wire Miles				Weight in Pounds				Single Circuit Mileage			
	Completed to Oct. 31st, 1914	Completed Oct. 31st, 1914 to Oct. 31st, 1915	Under construction to Oct. 31st, 1915	Completed and under construction to Oct. 31st, 1915	Completed to Oct. 31st, 1914	Completed Oct. 31st, 1914 to Oct. 31st, 1915	Under construction to Oct. 31st, 1915	Completed and under construction to Oct. 31st, 1915	Completed to Oct. 31st, 1914	Completed Oct. 31st, 1914 to Oct. 31st, 1915	Under construction Oct. 31st, 1915	Completed and under construction to Oct. 31st, 1915
No. 8 B. & S., C.C. steel..	207.32	.....	.....	207.32	520,615	.....	.....	520,615	103.66	.....	.....	103.66
No. 9 B.W.G. galv. iron..	.....	313.86	260.70	574.56	.....	985,193	818,326	1,803,519	.....	156.93	130.35	287.28
No. 10 B.W.G. galv. iron..	.....	230.92	.....	230.92	.....	587,377	.....	587,377	.....	115.46	.....	115.46
No. 10 B. & S., C.C. steel..	854.74	124.90	.....	979.64	1,341,496	196,027	.....	1,537,523	427.37	62.45	.....	489.82
Totals...	1,062.06	669.68	260.70	1,992.44	1,862,111	1,768,597	818,326	4,449,034	531.03	334.84	130.35	996.22

Gauge, Length and Weight of Conductors

Brown & Sharpe Gauge	Wire Miles			Weight Pounds			Miles Single Circuit Lines			Miles Double Circuit Lines			Total Single Circuit and Double Circuit Lines completed Oct. 31, 1915
	Completed to Oct. 31, 1914	Completed Oct. 31, 1914, to Oct. 31, 1915	Under construction to Oct. 31, 1915	Completed to Oct. 31, 1914	Completed Oct. 31, 1914, to Oct. 31, 1915	Under construction to Oct. 31, 1915	Completed to Oct. 31, 1914	Completed Oct. 31, 1914, to Oct. 31, 1915	Under construction to Oct. 31, 1915	Completed to Oct. 31, 1914	Completed Oct. 31, 1914 to Oct. 31, 1915	Under construction to Oct. 31, 1915	
400,000 c.m. Alum.	1.59	.....	.....	3,168	.....	.....	.53	.....	.....	.....	.....	.....	.53
4/0 Aluminum.....	182.94	.....	.....	192,764	.....	.....	.....	.....	.....	30.49	.....	.....	30.49
3/0 "	924.93	703.68	214.50	773,612	597,934	182,266	123.91	60.16	23.50	92.20	87.20	24.00	363.47
2/0 "	79.41	11.58	.....	52,663	7,585	.....	1.93	.....	.....	12.27	1.93	.....	16.13
1/0 "	533.52	302.58	.....	280,539	156,932	.....	89.24	100.86	.....	44.30	.....	.....	234.40
2 "	757.14	.....	.....	250,669	.....	.....	114.22	.....	.....	69.08	.....	.....	183.30
2 S.R "	.....	367.14	169.05	.....	378,219	83,345	.....	122.38	56.35	.....	.....	.....	122.38
1/0 S.R "	.....	.....	127.50	.....	.....	68,219	.....	.....	42.50	.....	.....	.....	.....
250,000 c.m. Copper	1.35	.....	.....	5,583	.....	.....	.45	.....	.....	.....	.....	.....	.45
4/0 Copper.....	93.00	3.75	.....	327,251	12,987	.....	.....	1.25	.....	15.50	.....	.....	16.75
2/0 "	.66	2.13	.....	1,562	4,646	.....	.22	.71	.....	.....	.....	.....	.93
1/0 "	.....	21.78	.....	.....	37,593	.....	.....	7.26	.....	.....	.....	.....	7.26
2 "	10.20	.....	.....	13,393	.....	.....	3.40	.....	.....	.....	.....	.....	3.40
4 "	4.68	22.05	.....	4,340	15,029	.....	.30	7.35	.....	.63	.....	.....	8.28
6 "	12.42	70.86	.....	8,401	47,937	.....	4.14	23.62	.....	.....	.....	.....	27.76
Totals.....	2,601.84	1,505.55	511.05	1,913,945	1,258,886	333,830	338.34	323.59	122.35	264.47	89.13	24.00	1,015.53

Total Mileage Low Tension Telephone Lines

COMPLETED AND UNDER CONSTRUCTION TO OCTOBER 31, 1915

Sect. No.	Miles	Sect. No.	Miles	Sect. No.	Miles	Sect. No.	Miles
L.T. 1....	2.84	L.T. 40 A	1.92	L.T. 95	10.15	S.L. 4	.42
" 2....	6.34	" 41	12.27	" 96	6.58	" 5	4.55
" 3....	1.13	" 43	1.21	" 97	4.00	" 6	12.27
" 4....	.18	" 45	.09	" 98	9.27	" 7	15.07
" 5....	1.64	" 46	2.22	" 99	19.18	" 8	1.50
" 6....	.76	" 47	14.36	" 100	1.25	" 9	11.86
" 7....	12.27	" 48	5.87	" 101	16.91	" 15	1.00
" 8....	9.90	" 49	3.79	" 102	1.48	L.T. 37	4.50
" 9....	11.12	" 50	4.98	" 103	9.98	St. L. 1	22.96
" 10....	10.30	" 55	1.68	" 104	8.50	" 2	16.29
" 11....	4.59	" 57	1.93	" 105	7.40	" 3	6.52
" 12....	1.13	" 57 A	.08	" 106	6.10	" 5	14.08
" 13....	1.75	" 58	6.42	" 107	6.44	W.L. 1	25.50
" 14....	2.04	" 59	5.82	" 108	13.03	" 2	1.47
" 15....	2.08	" 62	16.65	" 109	.02	" 3	9.67
" 16....	3.75	" 65	9.03	" 111	5.84	E.F.L 1	22.15
" 17....	.14	" 66	1.64	" 112	3.48	" 2	9.22
" 18....	.79	" 67	48.36	" 113	14.20	" 3	6.78
" 19....	1.54	" 68	3.21	" 114	8.90	" 4	15.97
" 20....	1.22	" 69	6.66	" 118	.37	" 5	15.70
" 21....	3.56	" 71	10.93	" 119	.09	" 7	E 11.50
" 22....	1.71	" 72	6.48	" 123	14.60	" 8	E 12.00
" 23....	.31	" 73	5.00	" 124	9.83	" 9	11.73
" 24....	3.55	" 74	10.50	" 125	E 10.10	" 10	13.16
" 26....	2.74	" 75	1.93	" 126	E 9.52	M.L. 1	E 26.50
" 26 A..	.24	" 79	.43	" 127	8.02		
" 27....	11.24	" 80	1.27	" 128	E 9.25		
" 28....	14.39	" 81	1.10	" 129	E 9.75		
" 29....	12.86	" 82	2.27	" 131	E 24.00		
" 30....	1.27	" 83	1.30	" 138	E 12.50		
" 31....	1.56	" 84	1.93	" 139	E 1.25		
" 32....	.09	" 85	14.61	" 140	E 13.00		
" 34....	14.07	" 86	1.18	" 141	E 2.50		
" 35....	.12	" 87	1.96	" 142	E 10.00		
" 36....	5.75	" 88	7.41	" 143	E 7.00		
" 38....	7.35	" 89	1.20	S.L. 1	4.29		
" 39....	.63	" 90	6.83	" 2	1.16		
" 40....	1.50	" 94	5.08	" 3	15.86		

"E" Equals estimate mileage Total 996.22

Size of Telephone Wire used on Telephone Lines

COMPLETED OCT. 31, 1914–OCT. 31, 1915

Section No.	Mileage	Gauge	Section No.	Mileage	Gauge	Section No.	Mileage	Gauge
		No.			No.			No.
L.T. 84	1.93	10 C.C. Steel	L.T. 99	19.18	10 B.W.G. Iron	Lt. 100	1.25	9 B.W.G. Iron
" 88	7.41	" "	101	16.91	" " "	" 123	14.60	" "
" 89	1.20	" "	102	1.48	" " "	" 124	9.83	" "
" 90	6.83	" "	103	9.98	" " "	" 126	9.52	" "
" 95	10.15	" "	104	8.50	" " "	" 127	8.02	" "
" 96	6.58	" "	105	7.40	" " "	" 128	9.25	" "
" 97	4.00	" "	106	6.10	" " "	" 129	9.75	" "
" 98	9.27	" "	108	13.03	" " "	E.F.L.1	22.15	" "
S.L. 15	1.00	" "	111	5.84	" " "	" 2	9.22	" "
St.L. 5	14.08	" "	112	3.48	" " "	" 3	6.78	" "
			113	14.20	" " "	" 4	15.97	" "
			114	8.90	" " "	" 5	15.70	" "
			118	.37	" " "	" 9	11.73	" "
			119	.09	" " "	" 10	13.16	" "
Total	62.45		Total.	115.46		Total.	156.93	

Grand Total 334.84

Size of Telephone Wire used on Telephone Lines

UNDER CONSTRUCTION OCT. 31, 1915

Section No.	Mileage	Gauge	Section No.	Mileage	Gauge	Section No.	Mileage	Gauge
		No.			No.			No.
L.T.125	10.10	9 B.W.G. Iron.	L.T. 140	13.00	9 B.W.G. Iron.	E.F.L. 7	11.50	9 B.W.G. Iron.
" 131	24.00	" "	" 141	2.50	" "	" 8	12.00	" "
" 138	12.50	" "	" 142	10.00	" "	M.L. 1	26.50	" "
" 139	1.25	" "	" 143	7.00	" "	.....	.....	.....
						Total.	130.35	

SECTION III

OPERATION OF THE SYSTEMS

NIAGARA SYSTEM

From an operating standpoint the fiscal year ending Oct. 31st, 1915, has been the most satisfactory yet experienced in the history of the Niagara System. The Ontario Power Company, as in former years, supplied the Commission with an almost ideal power service, and took care of the increased load on their plant in a very creditable manner.

That only two total system interruptions, each of momentary duration, occurred on the Niagara System during the year may be said to be partly due to the excellent condition of the high-tension line insulation. Notwithstanding the far-reaching network of 600 miles of low-tension lines, with the additional lines required to serve 28 new customers, the reliability of the service on the low-tension lines has been also maintained, as indicated by the small number of interruptions which occurred on the low-tension feeders.

During the summer electrical storms occurred on 49 days. The large majority of these storms did not traverse the system, but appeared to concentrate in the vicinities of Cooksville, Stratford, St. Marys and Windsor. The storms at Cooksville and Windsor were particularly frequent and severe.

The high-tension transmission line has given entirely satisfactory operation during the past year. The insulator trouble mentioned in previous reports has been eliminated to the extent that not a single failure occurred during the year.

The 162,000 suspension and strain units on the original line sections were tested twice for dielectric strength, and the result of these tests precludes any misapprehension as to the future performance of the insulators. The preliminary tests carried out on the new section of the high-tension lines showed conclusively that the condition of the insulator units is excellent.

It has been found that considerable re-construction work on old lines and readjustment details in connection with new lines after being placed in operation could be economically taken care of by the line maintenance gangs along with the regular patrol and maintenance work. In the early part of the year this department was utilized in making final adjustments of the span sags in the cable and ground wire on the high-tension transmission line between St. Thomas and Windsor, and also some special construction work at the railway crossings on this section of line.

On account of the increased load on the Niagara system it was deemed advisable to replace the No. 3/0 B. & S. gauge aluminum cable strung between Dundas and London on the north side of the western loop, exclusive of a part of the section between Berlin and Stratford, with steel reinforced aluminum cable. This work included delivery and erection of new cable, new line hardware and the delivery of the old cable on reels at the railway stations for shipment to different points on the Commission's systems, where it was used in the construction of low-tension lines. On the line section between Dundas and Guelph No. 6/0 steel reinforced aluminum cable was erected and No. 5/0 steel reinforced on the balance of the sections. This work was commenced on February 18th and finished on June 10th.

and was carried out in such a way that the north half of the western loop was available for operation at short notice a great deal of the time.

There are now three separate circuits of steel reinforced aluminum cable between Dundas and London, with the exception of the section between Berlin and Stratford.

Some slight changes were made in the adjustment of the cable sag and line supports of the copper conductors on the Toronto entrance towers.

The line maintenance department were employed in completing some minor construction details on the new high-tension tower line between Niagara Falls and Dundas. This line was placed in parallel operation with the old tower line on February 28th, with the result that a decided improvement was effected in voltage regulation on the entire system in addition to the increased security of the service.

The new low-tension steel tower line supporting four circuits of No. 3/0 B. & S. gauge copper cable between the Dundas high-tension station and Hamilton was turned over for operation on October 4th.

On the majority of the lines which have been in operation four and five years rather extensive tree trimming was required in order to provide the necessary clearance, which had been decreased by the growth of the trees.

The line maintenance department have continued the installation of sectionalizing and tap switches, which have proved very essential for efficient operation on account of the large number of branch lines being erected. These switches were installed on the lines serving the following municipalities:—Norwich, Beachville, Cheltenham, Fergus, Elora, Clinton, Seaforth, Goderich, and the Electric Steel & Metal Co.'s plant at Welland. Extensions were made to the wood pole low-tension line entrances at Berlin and Stratford high-tension stations to accommodate new lines recently erected in these districts.

The electrical and mechanical equipment of the high- and low-tension stations has given practically no trouble during the past year, which is partly accounted for by a periodic and rigid inspection, including special monthly tests of the insulating oil of the transformers and oil switches. The station maintenance men, in addition to the regular maintenance of the station equipment, have been employed to a considerable extent on re-construction.

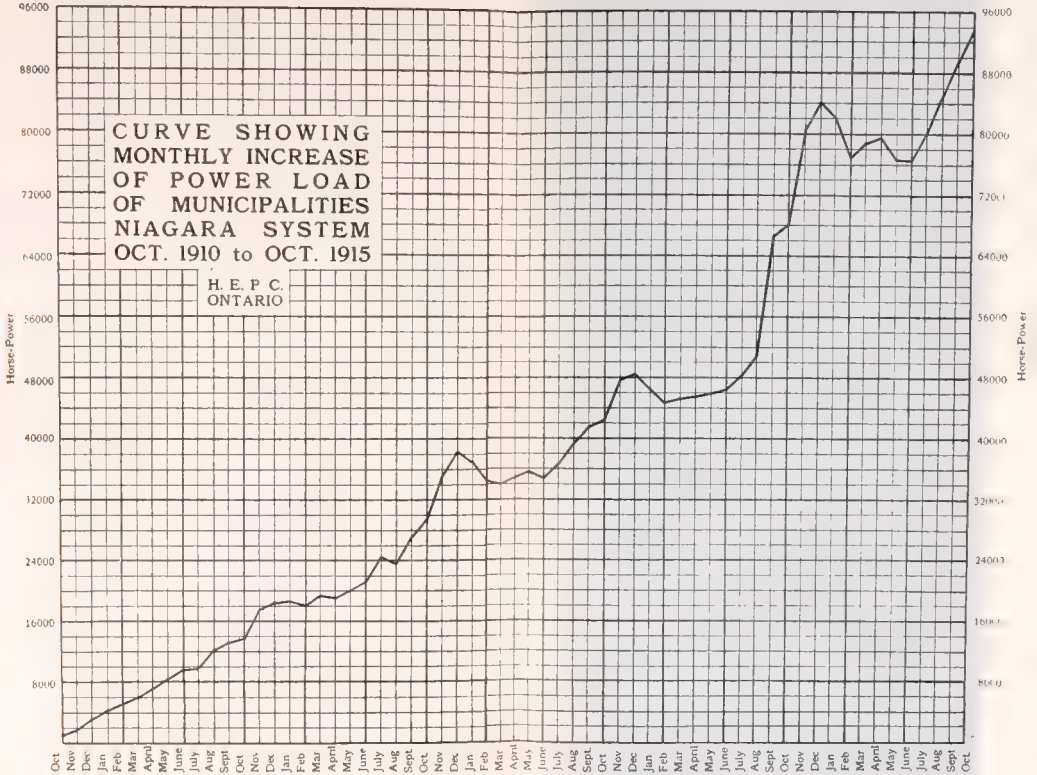
The station equipment of the Commission's private telephone system has been given a general overhauling during the past year. The trouble that was occasionally experienced in the maintenance of this equipment, due to inductive disturbance from the power lines, has been successfully overcome by the installation of a new type of protective apparatus, including an insulating transformer designed and installed by the telephone inspector. This equipment allows the use of standard switchboard apparatus and telephones. In the high-tension stations where this equipment has been installed not a single case of damage, due to inductive disturbances on the line, has occurred. Since the installation of this equipment the number of interruptions to the telephone service has been greatly reduced and the system generally improved. In addition to the above, the maintenance costs of the switchboard equipment, although never excessive, have been reduced at least 75%. The cost of maintenace of the telephone equipment at the customers' stations has been reduced 25% where these stations are fed from the high-tension stations having this equipment in service. The telephone switchboards in all of the high-tension stations have been overhauled and rewired during the past year. The telephone maintenance men have been also employed on the installation of the telephone equipment in the Commission's new stations.

The work of improving the interior and grounds surrounding the high-tension stations has been continued by the operators during the past summer. In most of the stations the floors and steel work have been re-painted and numerous improvements of a minor nature effected. At the new stations and stations which have been extended, roadways were built or re-located. Approaches were also built to the new storehouses which have been erected on the station grounds. Each year sees additional improvement at the stations, which is accomplished at practically no extra cost to the Commission.

It might be mentioned here that it was deemed advisable by the Commission to provide police protection of the Commission's property at the present time. Accordingly, arrangements were completed through the Ontario Government, and at each of the high-tension stations two operators were sworn in and vested with the powers of special Provincial constables for the protection of the Commission's property. Incidental to this procedure arms and ammunition were placed at the different stations. Additional protection has been afforded by the military authorities.

The tables given below show the load demands of the different municipalities in October, 1914, and October, 1915, as well as the increase during the year. In view of the existing commercial condition these figures are particularly interesting.

The plotted load curve on another page shows the combined load demand of the municipalities each month from October, 1910, to October, 1915.


CURVE SHOWING MONTHLY INCREASE OF POWER LOAD OF MUNICIPALITIES NIAGARA SYSTEM OCT. 1910 to OCT. 1915
H. E. P. C. ONTARIO
Horse-Power
96000
88000
80000
72000
64000
56000
48000
40000
32000
24000
16000
8000
1910 Oct Nov Dec
1911 Jan Feb Mar April May June July Aug Sept Oct Nov Dec
1912 Jan Feb Mar April May June July Aug Sept Oct. Nov Dec
1913 Jan Feb Mar April May June July Aug Sept Oct Nov Dec
1914 Jan Feb Mar April May June July Aug Sept Oct Nov Dec
1915 Jan Feb Mar April May June July Aug Sept Oct.

Municipality	Load in H.P. Oct., 1914.	Load in H.P. Oct., 1915.	Increases in H.P.
Toronto	21,508.5	32,748	11,239.5
Dundas	312.5	362	49.5
Hamilton	6,340.5	7,694.5	1,354
Waterdown	72.5	63	....
Caledonia	33.5	40.2	6.7
Hagersville	76	106	30
London	5,047	5,971.5	924.5
Thorndale	13	28.4	15.4
Thamesford	37	19.3	....
Guelph	1,427.5	1,954.5	527
Ontario Agricultural College	142.5	153	10.5
Central Prison Farm	47	203.5	156.5
Rockwood	29.5	34.2	4.7
Georgetown	119.5	266.5	147
Acton	69.5	84.5	15
Preston	804	973	169
Galt	1,103	1,602	499
Hespeler	212	368.5	156.5
Breslau	23	21.5	....
Berlin	1,816.5	2,285.5	469
Waterloo	453	717	264
Elmira	59	91	32
New Hamburg	104.5	84.5	....
Baden	149	157	8
Stratford	837.5	1,179.5	342
Mitchell	111	123.5	12.5
Seaforth	225	275	50
Clinton	95	98	3
Goderich	214.5	217	2.5
St. Marys	342	339	....
Woodstock	840	1,048	208
Ingersoll	321.5	740	418.5
Tillsonburg	205	233	28
Norwich	84.5	100.5	16
Beachville	131.5	132.5	1
St. Thomas	1,662	1,658.5	....
Pt. Stanley	66	68.5	2.5
Brantford	974.5	1,552.5	578
Paris	222.5	381	158.5
Pt. Credit	55	57.5	2.5
Weston	149	178.5	29.5
Brampton	493	539	46
Milton	143.5	287	143.5
Mimico	114	127.5	13.5
Mimico Asylum	32.2	35	2.8
Provincial Brick Yard	199	171	....
New Toronto	10	80.5	70.5
Toronto Township	95	62.5	....
Cooksville Dixie	31	23	....
Windsor	590	1,216	626
Walkerville	33.5	777.5	744
Elora	80.5	51.6	....
Fergus	53.5	68.5	15
Welland	500	3,038.5	2,538.5
St. Catharines	1,019	2,158.5	1,139.5
Pt. Dalhousie	119	104.5	....

A list of the municipalities connected to the Niagara System during the past year is given below:

Municipality	Date connected	Initial Load H.P.	Present Load H.P.	Increased H.P.
Strathroy	Nov. 30, 1914	27	143.5	116.5
Drumbo	Dec. 1, 1914	14	18	4
Plattsville	Dec. 1, 1914	14	32.2	18.2
Woodbridge	Dec. 2, 1914	24	32.2	8.2
Ayr	Dec. 5, 1914	37.5	35.5	....
Princeton	Dec. 18, 1914	7	9.8	2.8
Embro	Dec. 22, 1914	22	25	3
Chatham	Jan. 15, 1915	138	431.5	293.5
Lucan	Jan. 21, 1915	55.5	33.5	....
Bolton	Jan. 26, 1915	48.5	34.8	....
Mt. Brydges	Feb. 1, 1915	37.5	26	....
Wallaceburg	Feb. 3, 1915	141	177	3.6
Delaware	Mar. 1, 1915	5.5	7.2	1.7
Tilbury	Mar. 3, 1915	71	60.3	....
Simcoe	Mar. 9, 1915	56.5	114	57.5
Waterford	Mar. 10, 1915	51	35	....
Lambeth	Mar. 12, 1915	4	50.9	46.9
Grantham Twp.	Mar. 16, 1915	10	12.3	2.3
Dresden	Mar. 30, 1915	87	70	....
Dorchester	Mar. 31, 1915	10.5	20.7	10.2
Comber	April 20, 1915	16	19.5	3.5
Burford	May 6, 1915	14.7	45.6	30.9
Bothwell	Aug. 17, 1915	31.5	28	....
St. George	Aug. 17, 1915	29.5	45.6	16.1
Dutton	Aug. 27, 1915	39.5	47	7.5
Thamesville	Sept. 14, 1915	52.9	52.9	....
Blenheim	Oct. 20, 1915	53.6	53.6	....
Lynden	Oct. 22, 1915	6.7	6.7	....

The Capital Investment of the Niagara System in operation at October 31st, 1915, is as follows:—

Right-of-Way	$966,340 08
Steel Tower Transmission Lines	3,426,074 78
Telephone Lines	129,706 69
Relay System Lines	54,537 32
Conduit System, Ontario Power Co. to Niagara Station	94,736 49
Wood Pole Lines	1,523,214 36
Transformer Stations	2,479,346 33
Distributing Stations	150,593 34
Total	$8,824,549 39

The total expenditures in connection with the operation and maintenance of the Niagara System for the fiscal year 1914-15 are as follows:—

Operators' Salaries and Expenses, including Supplies		$60,086 90
Maintenance of Steel Tower Lines		48,660 02
" Telephone and Relay Lines		8,112 46
" Low-tension Lines		16,854 39
" Transformer Stations		34,242 20
" Distributing Stations		4,428 30
Administration and General Office Expenses		48,026 00
		$220,410 27
Interest on Invested Capital	$327,346 05	
Cost of Power at Niagara Falls	718,895 50	
		1,046,241 55
Total Expenditure		$1,266,651 82

A summary of the Financial Statement of the Niagara System operation for the fiscal year ending October 31st, 1915, is given below:—

Receipts

Power delivered, including charges for Administration, General Expense, Operation, Maintenance and Interest	$1,506,280 85

Disbursements

Power purchased, including losses in Transmission and Transformation, Administration, General Expense, Operation, Maintenance and Interest	1,266,651 82
Surplus applicable to Sinking Fund and Depreciation Reserve Account	$239,629 03

ST. LAWRENCE SYSTEM

During the last fiscal year the load on the St. Lawrence System has been doubled. The Municipality of Brockville was first supplied with Hydro power on April 24th, and at the present time the load taken by this municipality is 335 h.p. The Village of Williamsburg was first supplied on April 3rd with an initial load of 10 h.p. The demand of this village has increased to 30 h.p. The loads supplied to Prescott, Winchester, and Chesterville have all shown satisfactory increases.

No trouble has been experienced in the satisfactory operation of the Commission's lines and stations in this district. During the month of April the system power supply from the New York & Ontario Power Co. was transferred from Morrisburg to Iroquois. The hydraulic plant at Iroquois is at present working at full capacity with a load factor of well over 90%.

ST. LAWRENCE SYSTEM

The Operating Capital Investment of the St. Lawrence System to October 31st, 1915, is as follows:—

Transmission Lines	$147,651 94	
Distribution Stations	20,542 02	
		$168,193 96

The following is a statement of the Operating and Maintenance Expenses of the St. Lawrence System for the fiscal year ending October 31st, 1915, together with the Revenue derived from same:—

Revenue

Prescott Power Accounts	$4,671 47	
Winchester "	2,060 66	
Chesterville "	2,035 95	
Brockville "	4,013 65	
Williamsburg "	266 23	
		$13,047 96

Expenditures

Operator and Patrolman's Salary and Expenses, and proportion of Administration and General Office Expense	$1,320 75	
Interest on Capital Investment	5,744 86	
Cost of Power purchased	5,405 60	
		12,471 21
Net Surplus applicable to Depreciation Reserve		$576 75

PORT ARTHUR SYSTEM

The Commission's system at Port Arthur, including the transformer station and transmission lines, have provided entirely satisfactory service during the year. There were especially few interruptions, and no failures of the station equipment have been reported.

During the latter part of the year an agreement was reached with the City of Port Arthur whereby the division of the load carried by the municipal hydraulic plant at Current River and the Commission's sub-station was placed in the hands of the Commission's operators. This central control of the load will no doubt prove a more efficient method of operation with added profits for the City of Port Arthur.

The average load for the year supplied from the Commission's station was 2,350 h.p. The excess power required during peak load periods was carried by the Current River plant. Consequently the reserve horsepower on demand by the Commission from the Kaministiquia Power Co. was not increased.

PORT ARTHUR SYSTEM

The Capital Investment for the Port Arthur System to October 31st, 1915, is as follows:—

Transmission Lines	$22,162 17	
Transformer Stations	85,873 64	
		$108,035 81

The Operating and Maintenance Expenses for the fiscal year ending October 31st, 1915, are as follows:—

Operators' Salaries and Expenses, including Operating Supplies, and proportion of Administration and General Office Expenses	$5,839 02
Interest at 4% per annum	4,293 88
Sinking Fund at 1.8% per annum	1,932 28
Cost of Power	37,458 99
	$49,524 17

A Financial Statement of Operation for the fiscal year ending October 31st, 1915, is given below:—

Sum of monthly loads delivered and value, including charges for Administration, General Expenses, Operation, Interest, Sinking Fund and Depreciation	28,150.5 h.p.	$53,066 72
Sum of monthly loads purchased and value, including Administration, General Expense, Operation, Interest and Sinking Fund	28,150.5 h.p.	49,524 17
Surplus applicable to Depreciation Reserve		$3,542 55

SEVERN SYSTEM

The operation of the Severn System during the past year was very satisfactory. The power service was maintained with an excellent degree of reliability, and exceedingly few interruptions occurred.

The transmission system now consists of approximately 75 miles of double circuit and 31 miles of single circuit 22,000 volt lines, which connects the twelve municipalities of Midland, Penetang, Collingwood, Barrie, Orillia, Elmvale, Stayner, Creemore, Waubaushene, Coldwater, Pt. McNicoll and Victoria Harbor.

These municipalities are all located in the County of Simcoe, and are supplied with power from the Commission's generating station at the Big Chute on the Severn River.

The Waubaushene and Pt. McNicoll transformer stations and distribution systems were placed in operation on November 13th and December 3rd, respectively. The local distribution system at Victoria Harbor, which had been operated and maintained by the Commission since July 1st, 1914, was taken over by the local Hydro Department on October 1st, 1915, and is now being operated by them.

The maximum demand of the system during the year was approximately 3,000 h.p., and the Commission have in view the increasing power requirements of the municipalities.

During the month of October, 1915, work was commenced on stringing a No. 9 B. & S. gauge iron telephone circuit on the new pole line in the right-of-way between the Waubaushene switching tower and the power house. This additional telephone circuit was considered necessary on account of the inaccessibility during certain seasons of the year of the country through which these lines pass and the consequent difficulty in making repairs in case of trouble.

When completed there will be provided two telephone circuits on separate pole lines from the Big Chute plant to the operating centre at Waubaushene, and the reliability of the telephone communication will be greatly increased.

SEVERN SYSTEM

The Operating Capital Investment of the Severn System to October 31st, 1915, is as follows:—

Big Chute Generating and Transformer Station	$349,529 31
Transmission Lines	316,306 54
Distributing Stations	68,743 39
	$734,579 24

The following is a statement of the Operating and Maintenance Expenses of the Severn System for the fiscal year ending October 31st, 1915, together with the revenue derived from same:—

Revenue

Midland Power Accounts	$7,972 20	
Penetang "	9,600 71	
Collingwood "	11,141 25	
Barrie "	12,007 01	
Coldwater "	1,009 36	
Elmvale "	1,697 26	
Stayner "	2,469 59	
Creemore "	2,500 75	
Orillia "	4,800 00	
Waubaushene "	509 52	
Port McNicoll "	532 27	
Victoria Harbor Power Accounts	2,525 97	
		$56,765 89

Expenditures

Operators and Patrolmen Salaries and Expenses, and proportion of Administration and General Office Expenses	$14,771 53	
Interest on Capital Investment	29,302 11	
		44,073 64
Surplus applicable to Sinking Fund and Depreciation Reserve Account		$12,692 25

WASDELLS FALLS SYSTEM

The first year's operation and maintenance of the Commission's system in the Wasdells Falls District was successfully concluded in the month of October. The performance of the generating station and approximately 40 miles of 22,000 volt and 23 miles of 4,000 volt transmission lines was entirely satisfactory, and no difficulty was experienced in supplying a practically uninterrupted power service to the municipalities on this system.

It has been found that the arrangement made between the municipalities and the Commission for co-operation in the maintenance and operation of the local distribution systems and the Commission's lines and stations has proved very efficient and economical and will be continued in the future.

During the year a turbine-driven pump was installed at the generating station for unwatering the wheel pits for the purpose of examination or repairs to the turbines. The winch which lifts the stop-logs for the control of the water in the river was equipped with motor drive for electrical operation.

On account of the isolated location of the power house the Commission deemed it advisable to provide living accommodation for the operators near the plant. Accordingly a modern type of seven-roomed house was erected on the Commission's property. The house is supplied with water by the pneumatic system from a well sunk on the edge of the river bank. Electrical heating has been provided, and telephone communication with the power house.

The local 4,000 volt distribution system at Brechin was first supplied with power from the Commission's transforming station at Beaverton on December 19th.

While the present commercial depression has interfered somewhat with the growth of the load in some of the municipalities, the outlook for the future is very reassuring.

WASDELL SYSTEM

The Operating Capital Investment of the Wasdell System to October 31st, 1915, is as follows:—

Wasdell Falls Generating and Transformer Station Plant	$132,906 97
Transmission Lines	95,222 47
Distributing Stations	13,430 44
	$241,559 88

The following is a statement of the Operating and Maintenance Expenses of the Wasdell System for the fiscal year ending October 31st, 1915, together with the Revenue derived from same:—

Revenue

Beaverton Power Account	$3,681 00	
Cannington "	3,302 03	
Sunderland "	1,911 36	
Woodville "	3,265 56	
Brechin "	2,148 40	
		$14,308 35

Expenditures

Operators and Patrolmen's Salaries and Expenses, including Supplies	$3,808 33	
Administration and General Office Expenses	1,465 01	
Interest on Capital Investment	9,035 01	
		14,308 35

TOTAL CAPITAL INVESTMENT TO OCTOBER 31st, 1915

Following is a statement of Expenditures on Capital Account, including Niagara, Severn, Wasdell, St. Lawrence, Eugenia, Port Arthur, Muskoka, Renfrew and Ottawa Systems, also construction chargeable, stock on hand and tools.

Niagara System—Transmission Lines

Right-of-Way	$966,340 08	
Steel Tower Lines	3,426,074 78	
Telephone Lines	129,706 69	
Relay System Lines	54,537 32	
Conduit System (Ont. Power Co. to Niagara Station)	94,736 49	
		$4,671,395 36
Dundas to Hamilton Steel Pole Line	$52,828 95	
		52,828 95
Wood Pole Lines	$1,523,214 36	
Wood Pole Lines in course of construction	106,595 56	
		1,629,809 92
Welland and St. Catharines District Lines	$16,427 53	
		16,427 53
Rural Line Construction	275,118 03	
		275,118 03

Transformer Stations

Stations	$2,479,346 33	
Stations and Extensions in course of construction	106,604 14	
		2,585,950 47
Distributing Stations	150,593 34	
Distributing Stations in course of construction	2,776 25	
		153,369 59

Severn System

Big Chute Power Development, including Generating and Transformer Stations	$349,529 31	
Transmission Lines	316,306 54	
Distributing Stations	68,743 39	
Engineering on Proposed Stations	7 47	
		734,586 71

Wasdell System

Power Development, including Generating and Transformer Station	$132,906 97	
Transmission Lines	95,222 47	
Distributing Stations	13,430 44	
Engineering on Proposed Lines	11 56	
		241,571 44

St. Lawrence System

Transmission Lines	$147,651 94	
Distributing Stations	20,542 02	
Engineering on Proposed Lines	412 88	
		168,606 84

Port Arthur System

Transmission Lines	$22,162 17	
Transformer Stations	85,873 64	
		108,035 81

Eugenia System

Power Development, including Generating and Transformer Station	$599,934 62	
Transmission Lines	242,800 00	
Distributing Stations	16,608 29	
		859,342 91

Muskoka System

South Falls Power Development, including Generating and Transformer Station	$5,310 27	
Transmission Lines	28,230 41	
		33,540 68

Renfrew System

Round Lake Storage Dam	$20,758 74	
		20,758 74

Ottawa System

Meter Equipment	$432 39	
		432 39

General Accounts (Chargeable)

Construction Work repayable	$354,526 34	
Sales to Municipalities	109,704 18	
Renfrew District Operating Charges	937 05	
Cable Reels	6,604 82	
		471,772 39

General Accounts (Capitalized)

Office Furniture and Equipment	$20,312 50	
Unexpired Insurance (Employees)	2,866 87	
Unexpired Insurance (Furniture and Equipment)	76 00	
Stationery on hand	5,494 40	
Office Furniture and Equipment (Electrical Inspection Department)	5,779 97	
Toronto Storehouse, Testing Laboratory, Garage and Machine Shop	83,041 01	
Dundas Storehouse	1,586 04	
Automobiles and Trucks	18,552 85	
Office Building	211,863 77	
		349,573 41

Stock and Tools

Line and Station Construction Stock on hand	$157,243 21	
Line Maintenance Stock	26,786 39	
Station Maintenance Stock	17,426 58	
Operating Department Equipment	220 96	
		201,677 14
Line and Station Construction Tools and Equipment	$5,325 65	
Line and Station Maintenance Tools	2,097 26	
		7,422 91
Total Expenditure		**$12,582,221 22**

PROVINCIAL EXPENDITURES

Provincial Account For Fiscal Year 1914-1915

Engineering assistance to the non-operating Municipalities; the gathering of data throughout the Province for statistical purposes; reports on Municipal operation, and also the making of estimates for the delivery of power for Municipalities arranging to take current..	$46,038 08	
Municipal estimates for power supply and rate investigation	3,326 14	
Hydrographic surveys, storage surveys for the Province, reports and investigations of power sites and reports on stream flow	41,604 55	
Reports on overhead and underground construction for Municipalities, Rural Districts, and auxiliary plant investigations	4,514 42	
Engineering investigations for Municipalities, testing, and reports on proposed Municipal Electrical Railways...	45,925 18	
Rules and Regulations, inspection and installation of systems for the utilization of electric energy	4,770 85	
Demonstration at Rural and Urban Fairs	1,072 68	
Administration and General Expense	25,369 27	
		$172,621 17
Niagara Surveys		21,442 12
Electrical Inspection—Balance of Operating Expenses for period June 1st to October 31st, 1915		17,630 33
Executive		7,797 22
		$219,490 84

BALANCE SHEET

OCTOBER 31st, 1915.

Assets

Sundry Expenditures, per list	$12,582,221 22
Warrantable advances	23,033 96
Unpaid Power Bills, Oct. 31st, 1915	247,502 76
Cash on hand	126,068 06
	$12,978,826 00

Liabilities

Provincial Treasurer	$12,315,712 08
Niagara System, Surplus applicable to Sinking Fund and Depreciation Reserve Account	583,754 74
Severn System, Surplus applicable to Sinking Fund and Depreciation Reserve Account	16,774 46
Port Arthur System, Surplus applicable to Sinking Fund and Depreciation Reserve Account	24,212 85
Welland System, Surplus applicable to Sinking Fund and Depreciation Reserve Account	306 06
St. Lawrence System, Surplus applicable to Depreciation Reserve	676 54
Ottawa System, Surplus applicable to Sinking Fund	5 06
Storehouse and Laboratory Operation Surplus	7,106 64
Garage and Machine Shop Operation Surplus	1,724 57
Interest Account	28,553 00
	$12,978,826 00

SECTION IV

MUNICIPAL WORK

MUNICIPAL ADVICES

Preliminary Work

Petitions were received from residents in parts of the following townships, and based on these petitions meetings were held in these townships at which committees and secretaries were appointed to handle the preliminary work in circulating petitions and in getting contracts signed.

A standard schedule of rates was forwarded to these committees to be used in connection with this work:

Louth Township, East Flamboro Township, Beverley Township, North Dumfries Township, Downie Township, Waterloo Township, Barton Township, Townsend Township, Woodhouse Township, Nelson Township, Southwold Township, Yarmouth Township, Ancaster Township.

The work of building distribution systems in the following municipalities was completed and power turned on to supply consumers during the early part of the year. The systems in all of these municipalities are now operating very satisfactorily and the number of consumers and load has increased:

Ayr, Drumbo, Plattsville, Embro, Waterford, Lucan, Comber.

Numerous requests were received for a representative to investigate the requirements of a Hydro-Electric system, and in such cases an engineer visited the municipalities and obtained the necessary information. Estimates showing the figure at which power could be supplied to the municipalities were forwarded by the Commission. A number of valuations and investigations in connection with utilities have also been made for the municipalities. Special investigations have been carried on in connection with the design of outdoor substations, the effects of sleet storms on overhead pole lines, joint pole line and standard pole line specifications.

Engineering assistance has also been given to a great many of the operating towns on matters pertaining to rate application, economical operation of their local systems and increasing the lighting and power business.

During the year work of the foregoing nature was taken care of by the Department in the following municipalities:

Alexandria, Almonte, Arthur, Artemesia Township, Athens, Arva.

Barrie, Beaverton, Bracebridge, Brigden, Brockville, Burk's Falls.

Carleton Place, Campbellford, Cannington, Chatsworth, Chapleau, Chesterville, Chesley, Clifford, Cobden, Cobalt, Cochrane, Coldwater, Crediton.

Dashwood, Dundas County, Dundalk, Durham.

Eastwood, East Zorra Township, Elk Lake, Elmvale.

Flesherton, Fort Frances.

Grand Valley, Granton, Gravenhurst, Grenville.

Haileybury, Hanover, Havelock, Hastings, Hensall, Hepworth, Highgate, Holstein.

Ilderton.

Kemptville, Kintore, Kirkton, Komoka.

Lakefield, Lanark, Longford.

Maidstone Township, Markdale, Maxville, Meaford, Merrickville, Mount Forest.

New Dundee, New Liskeard, Newbury, North Bay, North Bay District, Norwood.

Oil Springs, Orangeville, Ottawa.

Paipoonge Township, Perth, Penetang, Peterborough, Port Arthur, Port McNichol (Tay Township), Prescott, Priceville.

Rainy River, Rochester Township, Rodney.

Sault Ste. Marie, Scarboro Township, Shallow Lake, Shelburne, Shedden, South Norwich Township, Smith's Falls, Stayner, Sunderland, Spencerville.

Tara, Tay Township (Port McNichol and Waubaushene), Trent Valley District, Trenton.

Vaughan Township, Victoria Harbor.

Waubaushene (Tay Township), Westport, West Lorne, Wilmot Township, Winchester, Woodham, Woodville.

Zurich.

Special investigations were made by the Department for the purpose of serving the following corporations. Contracts for power were drawn up and submitted.

C. P. Ry. Pt. McNicoll Terminal	800 H.P.
National Portland Cement Co. Durham	1,300 "
Can. Cement Co., Shallow Lake	800 "

Valuation of the Pine River Light & Power Company's plant was made by the engineers of the department to determine the possibility of the purchase of this property by the Commission.

Notes on engineering assistance rendered other municipalities are given in the reports following.

Ailsa Craig

At the request of the municipality, an estimate of the cost of a distribution system was made and details of this estimate forwarded to them for their consideration. The municipality was also advised that 100 h.p. could probably be supplied for $49.67 at 4,000 volts. The enabling by-law was submitted to the ratepayers on January 1st and the money by-law in June. Both of these by-laws carried.

At the request of the municipality, the distribution system was installed under the supervision of our engineers, and it is expected that power will be available early in the coming year.

Atwood

During the year estimates for the supply of Hydro-Electric energy to the Village of Atwood, in conjunction with other towns in the district, have been prepared and submitted.

A representative of the Commission has also explained the necessary procedure to the council of the Township of Elma, in which Atwood is situated.

The cost of power to the village, based on 50 h.p. at 4,000 volts is $53.04 per h.p. per year.

Aylmer

An engineer visited this municipality and obtained detail information in connection with their power requirements. The municipality at present own and operate a steam plant for supplying power and light in the municipality, and it is expected that Aylmer will consider the proposition of obtaining power from

the Commission on the expiration of their present contracts with the local manufacturing companies for the supply of free light, heat and power.

Berlin

Few cities in Ontario have made as good a showing under municipal ownership as Berlin. When Hydro was introduced the Electrical Department discarded a large amount of old equipment and purchased new apparatus to distribute Hydro-Electric energy. This year extensive changes have been made in their station, a new transformer building was erected and equipped with additional transformers and high tension switches; the distributing section was remodelled and new power and lighting feeder panels installed; future requirements were anticipated and arrangements made for regulating all or part of the load.

The work was done according to plans submitted by the Commission, under the supervision of the local manager, and assistance rendered by the Commission's engineers.

The load conditions in Berlin show a healthy growth, both in power and lighting. Practically an even day and night load is shown by the chart, which ideal condition accounts for the low rates being given to consumers.

Blenheim

The Hydro enabling by-law and a money by-law for $14,000 were voted on and carried on May 10th. The municipal distribution system was remodelled under the supervision of the Commission's engineers and put into operation by Hydro power on October 20th.

An ornamental street lighting system has been installed consisting of approximately twenty 14 ft. cast iron ornamental standards of the Shepherd's Crook type equipped with 400 c.p. lamps, the extra cost of the ornamental system being paid for on the local improvement plan. A complete street lighting system was constructed in the municipality, the series system and nitrogen-filled lamps being used.

Bolton

The privately owned generating and distribution system was purchased by the village and the distribution system rebuilt under the supervision of the Commission. Hydro power was first received on January 26th, while the work of rebuilding the system was completed the following month.

Since the above date the Commission has given considerable assistance in the carrying on of the business and in making extensions to the system.

Brantford

At the request of the Brantford City Council, the Commission investigated the matter of removing the elecric light and power, telegraph and telephone poles and wires from Colborne Street.

A full report was made by the Commission to the city council in connection with this matter, giving an estimate of the cost of making this change. This report has been forwarded and is now being considered by the Council.

The Hydro-Electric System and municipal railway have, during the year, been placed under one management.

Brantford Township

Brantford Township Council have decided to either purchase the Western Counties Electric Co's. distribution system in the districts of Parkdale, Echo Place and Grandview, or building new systems in these districts, so that all the houses in the district may be served and a suitable street lighting system installed.

A contract has been signed by the council agreeing to take power from the Commission, and steps are being taken to make the valuation of the Company's systems in these districts, after which negotiations will be commenced for purchasing, if possible, the company's system.

Rural petitions were received from the district adjoining our high tension station, and also from Mt. Vernon. Based on these petitions estimates were prepared and forwarded to the township council to be submitted to the ratepayers.

Brechin

Work on the low tension line from Beaverton and the distribution system in Brechin was carried on and completed under the supervision of this department.

Power was turned on from the Beaverton sub-station on December 19th, 1914. Operation has been carried on with the assistance of this department.

Brockville

The Commission's new 26,400 V. line from Prescott to Brockville and the new sub-station in Brockville were completed this year. Service was first given to Brockville from the St. Lawrence system on April 24. An insufficient supply of power on this system, caused by delay in making the expected development near Morrisburg, has necessitated the operation of the Brockville steam generating station during times of heavy load.

Burford

Hydro by-laws were voted on and carried in this municipality on October 2nd, 1914, and a new distribution system built under the supervision of the Commission's engineers and put into operation in March. The Commission on a request from the Police Trustees made an estimate on the value of the privately owned plant which is operating in the municipality and a report was submitted in this connection.

On the advice of the Commission the Police Trustees offered the owner $1,000 for his plant, which he declined to accept.

The municipality signed a contract with the Commission for 50 h.p. at $37.50 and at the present time the load on the municipal station is almost equal to the amount contracted for.

Burgessville

Burgessville was created a police village during the year, and at the request of the Police Trustees, who were elected in March, the following rates were forwarded for their consideration:

H.P.	Volts	Cost per H.P. per Year.
50	2,200	$45.00
30	2,200	48.38

An engineer visited the municipality and obtained sufficient information to make an estimate of the cost of a distribution system, and this estimate is now being prepared, and it is expected that Hydro-Electric by-laws will be submitted to the ratepayers early next year.

Chatham

A complete new distribution system has been erected in the municipality during the year, the engineering in connection with which was superintended by the Commission. The system was placed partially in operation during the month of January and additional customers added as the work progressed. The system was entirely completed in August.

A combined sub-station and office building was erected on the main street, both of which are now complete.

An ornamental street lighting system has been installed and is being paid for on the local improvement plan. On King Street, 14 ft. ornamental cast iron standards equipped with 500 watt nitrogen-filled lamps, and on Queen and William Streets, 12 ft. ornamental cast iron standards have been installed, equipped with 400 watt lamps. The series system and nitrogen lamps have been used throughout both in connection with the ornamental and residential districts.

Arrangements have been made by the municipality to install a 50 h.p. motor in connection with the waterworks plant. Negotiations are at the present time under way for the supply of power to several large consumers who are erecting plants in the municipality.

Delaware

An estimate of the cost of a distribution system was made at the request of the municipality and a recommendation was forwarded to them to submit the money by-law to the ratepayers for $4,000 to cover the cost of installing a distribution system. These by-laws were submitted to the ratepayers on January 4th and carried. At the municipality's request the distribution system was installed under the supervision of the Commission's engineers and power was turned on their system March 1st. Since that time the system has been operating quite satisfactorily.

Dorchester

At the request of the Police Trustees of the Village of Dorchester, an engineer visited this municipality and obtained sufficient information to make an estimate of the cost of a distribution system. This estimate was completed and forwarded to the Police Trustees who were advised to submit to the ratepayers a money by-law for $4,300 for the purpose of installing a distribution system. The municipality were also advised that power could be supplied at the following rate:

H.P	Volts.	Cost per H.P. per year.
20	4,000	$45.00

The Hydro-Electric by-laws were submitted on May 21st, and carried by large majorities.

Dresden

The distribution system in the municipality was remodelled and extended according to plans prepared by the Commission's engineers, and Hydro power was first put into operation in the municipality about April 1st, the Waterworks Department and Hydro-Electric Systems being operated under one management. The old rates have been materially reduced and a number of customers connected to the system which has been largely increased.

Dundas

Owing to the extensions being made in the high tension sub-station in Dundas, from which the municipality's system was supplied with power, it was necessary for the municipality to construct a new and separate distributing station.

This station was constructed under the supervision of the Commission's engineers at the municipality's request. Extensions have also been made to the distribution system to supply power in the surrounding districts which are being operated by Dundas as part of their system.

Dutton

The municipality were advised that 50 h.p. could be supplied for $43.53 at 4,000 volts, and estimates of the cost of a distribution system were made and the municipality advised to submit a money by-law to the ratepayers for $10,000 to cover the cost of a distribution system.

Both the enabling and money by-laws, on being submitted to the ratepayers, carried, and a distribution system was installed and put into operation in September. The engineering and supervision in connection with the installation of this system was handled by the Commission, the labor being supplied locally.

Exeter

The Commission were advised by the municipality that the present local company's franchise for the distribution of light and power in the municipality expires in December, 1915, and a request was received to send an engineer to Exeter to investigate local conditions and forward estimates of the cost of supplying power.

Detail information was obtained in connection with the municipality's requirements for a distribution system, and this estimate was forwarded by the Commission with a recommendation that a money by-law for $20,000 should be submitted to the ratepayers to cover the cost of installing a distribution system.

A valuation was also made of the local company's plant, and a recommendation forwarded to the municipality in connection with same. The municipality were also advised that 200 h.p. could be supplied for $43.70 per h.p. per year at 4,000 volts.

The Hydro-Electric by-law carried on July 16th, and the work of building a distribution system will be started early during the coming year.

Forest

An estimate has recently been submitted to the municipality of Forest in connection with the cost of Hydro power, and according to the engineer's estimates 100 h.p. can be supplied at a rate of $63.27 per h.p. per year, and steps

are being taken to submit a Hydro enabling by-law to the electors at the coming municipal elections.

The municipality spent a considerable amount in connection with remodelling their municipal system during the past two years, and as the present system has a frequency of 25 cycles, very little extra expense would be required if Hydro power is introduced.

Ford City

This municipality being immediately adjacent to Walkerville, arrangements have been made to supply power from the Walkerville system, the customers in Ford City being handled as part of the Walkerville system.

On the request of the council a complete street lighting system has been installed in the municipalities under supervision of the Commission.

Goderich

During the year the electrically driven pump in the Waterworks Department, which was purchased with the advice of the Commission's engineers, was put in operation.

The pump is of sufficient capacity to enable the town to operate during off peak hours, for domestic supply, and also gives excellent fire protection.

Extensions to the system have been made to serve Ridgewood and Menestung Parks, also farmers outside the municipality. A noticeable feature in Goderich is the street lighting, which gives the town a very progressive appearance.

Grantham Township

In the early part of the year the Commission constructed a system in the lower part of the township to serve those of the petitioners in the district where the number of consumers per mile met the conditions on which the estimate was based, a total of 55.

The service in this district was turned on in March with an official opening at McNab.

As the demands from the other parts of the township from those which had signed applications for service were pressing, and a few new contracts had been secured, enough to bring the number of consumers per mile up to the standard on which the original estimate was based, arrangements were made by the township for the Commission to build extensions from Carlton Street to the Lake Road and Carlton Street to Homer, east of the canal, and west of the old ship canal in what is known as the Lot 2 hill, Martindale Road and Middle Road district. These extensions are under construction at present and will serve about 40 consumers to begin with.

Gravenhurst

The Commission has acquired from Gravenhurst all rights and title to that town's generating system at South Falls on the south branch of the Muskoka River, and has as well made a contract with Gravenhurst for a supply of power therefrom. The South Falls power is being remodelled and enlarged to serve Gravenhurst, Bracebridge and Huntsville, the former two towns at generator voltage (6,600 V.) and Huntsville at 22,000 volts.

Advice and assistance have likewise been given Gravenhurst on improving the town distribution system, and preparations have been made to discontinue the old system of flat rate service and substitute meter rates therefor.

Grimsby

At the request of the Grimsby town council an investigation was made in connection with the Cataract Power Co's. high tension lines in the municipality, and a full report in connection with this matter is being prepared.

Guelph

Assistance has been given this municipality from time to time by the department, particularly in the laying out of an ornamental street lighting system for the main streets. An investigation has also been made of the cost of furnishing power to the street railway and a new rate set for this service.

Hamilton

The Hamilton City Council applied to the Commission for a ruling in connection with the removal of all poles and overhead wires in the central part of the city, where underground conduits are installed.

A full report in connection with this matter has been prepared by the Commission's engineers, and an order to the companies owning these poles in question is now being prepared by the Commission.

Harriston

For some years the Town of Harriston has been requesting the Commission for a supply of Hydro power, but until this year it was not considered feasible, owing to the lack of co-operation with the other towns in that district. This year, however, the engineers of the Commission prepared estimates, based on feeding Milverton, Listowel, Atwood, Palmerston, Harriston and Clifford, over a 26,400 volt line running in a northerly direction from the Stratford-Goderich feeder, and submitted prices to the various municipalities.

The cost of 4,000 volt power at the various towns, ready to distribute, is as follows:

Milverton, 200 h.p.	$35.63
Listowel, 300 h.p.	37.41
Atwood 50 h.p.	53.04
Palmerston 200 h.p.	40.82
Harriston 200 h.p.	46.62
Clifford 100 h.p.	55.84

Estimates on the cost of erecting new power lines, and remodelling the present system were also provided, and after explanations by the engineer and others the by-laws were submitted and passed.

The Water and Light Commission then requested assistance in the purchasing of material and handling the work, and at the present time all material has been ordered, the work on the station started, etc. Many manufacturers are anxiously awaiting power and prospects are bright for a good load. It is expected that Hydro power will be available in Harriston early in the year 1916.

Harwich

During the early part of the year petitions from residents immediately south of Chatham were received, and based on these petitions an estimate of the cost of supplying power to these customers was prepared and forwarded.

Based on these rates sufficient contracts were signed to warrant the building of a line, which was done in September, and with the result that a number of consumers are being supplied in this district.

Hespeler

During the year a money by-law was submitted to the ratepayers for sufficient money to install an electrically operated pump for domestic and fire purposes.

The street lighting system was extended and improved, and additional equipment installed to take care of additional lights.

From time to time the Commission's engineers visited the municipality to give advice in connection with various questions.

Huntsville

A power agreement was executed with Huntsville for the supply of 800 h.p. The South Falls plant on the Muskoka River has been acquired by the Commission from Gravenhurst and is being remodelled and enlarged to serve Huntsville as well as Gravenhurst and Bracebridge. A 22,000 volt line is being built from South Falls to Hunstville and a suitable sub-station is about to be built in Huntsville.

The town has, with the assistance of this department, made an agreement with the Anglo-Canadian Leather Company for power. Estimates have been prepared and plans submitted for rebuilding the town distribution system, and this work is being proceeded with under the direction of the Commission.

Iroquois

The Rapids Power Company, from whom the Commission's supply of power is secured for the St. Lawrence system, transferred its sub-station from Morrisburg to Iroquois in April. At this place power is being secured temporarily from the Beach power development on the canal.

Kingston

Upon request from the Utilities Commission this department has made extensive investigations in connection with local lighting and power rates, power costs, etc. Assistance was also given in connection with the purchase of electrical equipment and supplies.

Negotiations were also entered into for a limited supply of power from Kingston Mills.

A valuation of the municipal water, gas and electric systems was completed for the city and in addition certain tests were witnessed to determine the cost of electric power for railway purposes.

Lambeth

The municipality were advised that 25 h.p. could be supplied for $46.56 at 4,000 volts.

Information was also forwarded to them that a distribution system would

cost approximately $4,000 and they were recommended to submit a money by-law to the ratepayers for this amount.

Both the enabling and money by-laws were submitted to the ratepayers and carried by large majorities. A distribution system was installed and put into operation on March 15th.

Data is now being prepared in connection with the installation of an electrically driven domestic pump.

Listowel

Estimates on the cost of a supply of power for Listowel was prepared in conjunction with other towns (see report on Harriston) and forwarded in May, 1915. Upon receipt of this information the town authorities visited various Hydro towns and decided to submit the by-laws to the people.

Both the enabling and money by-laws carried, and a contract was entered into for 300 h.p. at 4,000 volts, the price being $37.41 per h.p. year.

The cost of reconstructing the distribution system was estimated at $7,000, and $5,000 was also voted for suitable pumping equipment. Part of the material has already been purchased and the station transformers are ready for shipment. Power will be delivered early in 1916.

Lynden

The Police Village of Lynden voted on and passed a Hydro enabling by-law and a Hydro money by-law for $4,750 on May 31st, and a new system was constructed under the supervision of the Commission's engineers and was put into operation in October, the contract being signed by the municipality for 120 h.p. at $33.00 per h.p. per year.

Indications are at the present time that a large rural load will be developed in this district.

Markham

Acting on request of the local council assistance was given in the complete reconstruction of the distributing and street lighting system of the Village of Markham.

Power will be supplied by the old steam plant but the alterations to the lines have been made in a way to make them, as nearly as possible, suitable for operation on the Niagara system at such time as the Commission is in a position to furnish this service.

Milverton

Milverton entered into a contract with the Commission for a supply of 200 h.p. at 4,000 volts at $35.63 per h.p. year, and also carried a money by-law for $7,500 for the installation of a new distribution system.

The local Commission requested the engineers to purchase the material required and supervise the construction of the system. This work is now under way, and the system will be placed in operation early next year. Milverton is one of the towns which will receive power from the Stratford-Harriston line (see report on Harriston).

Morrisburg

A temporary supply of power to Williamsburg was secured from Morrisburg.

The Commission's supply of power for the St. Lawrence system, secured through the Rapids Power Company, was transferred from Morrisburg to Iroquois.

Mt. Brydges

A recommendation was forwarded to the municipality to submit a money by-law to the ratepayers for an amount of $4,200, which was the estimated cost of installing a distribution system.

This system was put into operation on Feb. 2nd, and is now operating quite satisfactorily.

Niagara Falls

The Commission, on request from the municipality, submitted prices for 2,000 and 5,000 horse-power to be delivered to the municipality. This information was submitted in June, and on November 3rd, a Hydro enabling by-law and a money by-law for $14,000 were voted on and carried, the Money by-law being amount which the Commission estimated would be required to purchase apparatus to equip the municipal sub-station.

On November 30th, the Commission commenced supplying power for the operation of the municipal pumping station, the original contract of the Ontario Power Co. having expired.

The municipality will commence taking power for their municipal distribution system in November, 1916, which is the date ending their present contract for power with the Ontario Power Co.

Rates have been submitted to the municipality which will be put into effect the first of the year 1916.

North Norwich Township

Extensions were built and estimates prepared last year east from the line east of Norwich to Hatchley in Burford Township and north-east from the north line to New Durham to serve 28 applicants.

Later a petition was received from a group on the 5th line at the west end of the township. Estimates were prepared and the applications being signed by the group, an extension was built south from Newark on the L. T. poles one block and east and west on the 5th line 2¼ miles.

Later, petitions were received for an extension to the Hatchley line ½ mile and an extension to the north line on Quaker Road 1 1/10th miles. Estimates were prepared and extensions approved by the Commission.

At the end of the year, 48 contracts of 44 horse-power total were being served in this township.

The progress in this district since the first services were given has been more rapid than that in any other part of the Hydro system. This is purely a dairy district and not given to intensive work in any form.

Otterville

At the request of the Police Trustees of the Village of Otterville an estimate of the cost of power was made and forwarded to them as follows:

H.P.	Volts	Cost per H.P. per Year
50	4,000	$45.00

A schedule of rates at which power and light could be sold to consumers was also forwarded for their consideration, and they were also advised to submit a money by-law to the ratepayers for an amount of $4,500 to cover the cost of installing a distribution system in the municipality, and Hydro-Electric by-laws

are at present being advertised and will be submitted to the ratepayers early next year.

Owen Sound

Preparations for receiving Eugenia power by the municipality were made during the year.

A new sub-station and office building have been constructed and power will be delivered to the municipality in the month of November.

Parkhill

At the request of the municipality an engineer visited Parkhill and investigated their power requirements, obtaining sufficient information to make an estimate of the cost of a distribution system, and also sufficient details in connection with the present privately owned plant to make a valuation of same.

A valuation of this private plant was made and forwarded to the municipality, giving the replacement value, present value and value to the municipality.

Information was forwarded to the municipality, giving estimates of the cost of supplying them with 50-100 and 150 h.p. respectively.

Palmerston

The municipality of Palmerston opened correspondence during the year for a supply of power from the Commission. Estimates were submitted, and the Commission's engineers prepared plans and advised on the cost of installation. By-laws were submitted and carried, and after careful investigation in regard to prices of material, the Committee of the council requested the Commission to purchase the supplies and supervise the construction.

A supply of money was also voted for the purchase and installation of an electrically driven waterworks pump, it being estimated that a considerable saving could be made over the cost of pumping by compressed air, which is the method now used.

Work has already been started on the well and orders placed for the line material. It is expected that power will be available early in 1916. (See also report on Harriston.)

Petrolia

A Hydro enabling by-law and a money by-law for $35,000 were submitted to the people on July 14th and carried, several public meetings having been held previously at which a representative of the Commission was present.

At the request of the council the valuation of the Petrolia Utility Company's electrical plant was made by the Commission's engineers and on the recommendation of the Commission the municipality offered the company $11,285 for their outside distribution system, which offer was accepted by the company. The work of remodelling the company's distribution system is now under way under the supervision of the Commission's engineers and will be put into operation early in the coming year.

The Commission has also been authorized by the council to install an ornamental street lighting system on the main street consisting of approximately twenty-five 16 foot ornamental cast iron standards of the Shepherd's Crook type equipped with 600 c.p. lamps. Arrangements have been made to clear the main street of the lines of both the electric light plant and the telephone and telegraph company's.

Port Colborne

The Council of Port Colborne in June by resolution requested the Commission to make a valuation of the Ontario Power Co's. system in Port Colborne with the object in view of purchasing, if possible, the company's complete plant.

This work was completed and report submitted to the council, but owing to the expensive equipment in connection with large power consumers, the council decided that the cost of the system would be too great for them to undertake to purchase at the present time, and in September a by-law was carried allowing the municipality to make a contract with the Ontario Power Co., for a supply of power for a term of five years.

Port Dalhousie

During the year arrangements were made by the municipality to install meters on all customers, and by the first of the year 1916 the flat rate service will be discontinued entirely. This move was found necessary in order to put the system in good financial condition.

The installation of meters was advised by the Commission when the municipality first commenced taking power, but delay on the part of the council to raise sufficient debentures to cover the cost of the change has caused the delay in changing over from the flat rate system.

Port Robinson

The municipality of Port Robinson is supplied with power through the Welland sub-station, and the system in this municipality is operated by the Welland Commission as an extension to their system.

Owing to the construction of the new Welland Canal necessitating the removal of the low tension line supplying this village, investigations have been made in connection with the installation of a sub-station to take care of the present and proposed loads in this municipality.

Princeton

Hydro by-laws were submitted to the ratepayers of Princeton and carried. The amount of the money by-law which was submitted to cover the cost of the distribution system was $3,500. At the municipality's request a distribution system was installed under the supervision of the Commission's engineers. Power was turned on in December and since that time a number of additional consumers have been connected to the system.

Ridgetown

On May 10th, the Hydro enabling by-law and the money by-law for $12,500 were voted on and carried, a public meeting having been previously held, at which a representative of the Commission was present. The municipal distribution system is being reconstructed under the supervision of the Commission's engineers, and Hydro power will be available in the municipality early next year. The municipality signed a contract with the Commission for 200 h.p. at $47.17 per h.p. per year.

An ornamental street lighting system consisting of approximately twenty 12 ft. ornamental cast iron standards equipped with 600 c.p. lamps is being installed on the main street, the extra cost of which is being paid for on the local improvement plan.

Sandwich

In January, a Hydro by-law was submitted and carried, and a contract signed by the municipality to take power from the Commission.

On the advice of this Commission the council requested by resolution that they be supplied with power by the Windsor Hydro-Electric system and that the Sandwich system be operated as part of the Windsor system.

On request of the council, a valuation of the Sandwich, Windsor and Amherstburg Co's. system in Sandwich was made and a report submitted, the Commission advising that $3,500 be offered the company for their complete distribution, which offer the company declined to accept.

On authority from the council the Commission then constructed a complete distribution system in the municipality, together with a street lighting system. The street lighting system was put into operation in October and in April, 1916, the company have been notified to discontinue the distribution of power in the municipality and to remove their system from the streets.

Approximately one hundred 11 ft. ornamental cast iron street lighting standards have been erected in the business district and at some of the residential streets, the ornamental system being paid for on the local improvement plan.

Sandwich East Township

A number of extensions have been made into the township from the Windsor Hydro-Electric system. One of these extensions has been carried south a distance of approximately 3 miles to supply the Walker farms and another line has been built through Ford City and along the River Road to Tecumseh, a distance of approximately 7 miles, a considerable number of summer homes being supplied from the line between the two municipalities.

These lines in the township are handled by Walkerville as part of their system.

Sarnia

The Hydro question was taken up with the council by the engineers of the Commission in February, and on a request from the council by resolution a valuation of the Sarnia Electric Light Company's plant was made by the Commission's engineers. In September, after negotiations with the municipality and the local company, the municipality on the recommendation of the Commission offered the company $175,000 for their complete distribution system and generating station. This offer was accepted by the company and arrangements have been made to submit the ratepayers the Hydro by-laws at the coming municipal elections.

According to estimates prepared by the Commission's engineers the municipality of Sarnia could be supplied with 1,500 h.p. at a rate of $38.00 per h.p. per year.

Simcoe

A complete new distribution system, construction of which was commenced in the fall of 1914, was completed and put into operation in March, the work having been done under the supervision of the Commission, the total cost of the system being approximately $32,000.

In the business district of the town, arrangements were made to keep the streets free from pole lines and 12 ft. ornamental cast iron standards were installed, fitted with 400 c.p. nitrogen-filled series lamps. A complete street lighting system has been installed in the municipality and the series system used throughout.

The operation of the system for the year has shown very excellent results in spite of the fact that good cheap gas is available in the municipality.

A Public Utilities Commission has been appointed, and the Hydro-Electric system and the waterworks plant will be operated under one management.

The Lake Erie & Northern Railway Co. will commence taking power during the year for the operation of their line to this district.

Stamford Township

At the request of Stamford Township council an inventory and valuation was made of the Ontario Distributing Company's system immediately adjoining Niagara Falls, and a full report in connection with this valuation is being forwarded to the township council for their consideration, as well as a schedule of rates to be charged to consumers by the township should they decide to purchase and operate the Ontario Distributing Company's system.

Stratford

Considerable extensions have been made in the Stratford system during the year. Outside of the additional requirements to serve new customers a general remodelling of the main feeders throughout the city has been commenced, according to plans suggested by the Commission's engineers. Most conspicuous is the new Whiteway lighting, which consists of gas-filled lamps, hung from " Shepherd's Crook " fixtures, mounted on trolley poles. The circuits are so arranged that the lights on one side of the street may be cut off after midnight. On the streets where the ornamental lighting is used, the wooden poles have been removed and service is supplied from the rear of the buildings.

The entire work was placed in the hands of the Commission and was completed in record time, and well within the estimate. The city has now one of the most modern and efficient lighting systems in the Province, and much satisfaction was expressed by the local authorities.

The Waterworks Department have also been active, and with the advice of the Commission, a new domestic pump has been installed. This pump replaced one of the original motor driven units, which had insufficient capacity for the increased demand. Upon the completion of this installation, the Water Commission wishing to give better service, applied to the Railway and Municipal Board for an appropriation of $50,000 for the purchase of a 500,000 imp. gal. water tower and two gasoline engine driven pumps, to be used as an auxiliary to the electrically driven pumps, in place of steam.

Engineering advice was obtained from the Commission, their engineers drawing up plans and specifications, and calling for tenders on, and testing the equipment.

The work is progressing favorably, the pumps are being installed and foundations for the tank under way. The system will be completed during the coming year.

St. Catharines

There has been a remarkable increase in the power load on the St. Catharines system during the year, due partly to the large number of manufacturing companies being engaged in manufacturing war munitions, the power load having almost doubled during the year. The number of customers connected on the system has also been very largely increased.

Assistance has been given to the municipality during the year in connection with arrangements for ornamental lighting on a number of business streets, and it is expected that the proposed ornamental lighting system will be installed next year.

St. George

The municipality were advised that power could be supplied at the following figures:

H.P.	Volts	Cost per H.P. per Year.
100	4,000	$46.56
150	4,000	39.18

Detail information was obtained in connection with the requirements for a distribution system, and an estimate of the cost of same was prepared and forwarded to the municipality for their consideration with a recommendation that they should submit a Hydro-Electric money by-law to the ratepayers for an amount of $5,850.

On May 3rd, the Hydro-Electric by-laws were submitted to the ratepayers and carried by large majorities. Since that date a distribution system has been installed under the supervision of the Commission's engineers, and this system was completed and power turned on the same Aug. 17th.

Rates were forwarded to the municipality for power, domestic, commercial, and street lighting, and the system is now operating quite satisfactorily.

St. Jacobs

Estimates were submitted and plans forwarded early in the year in connection with power for this municipality. No action has yet been taken by the trustees, but it is expected that further investigations will soon be made by the village trustees for a supply of power.

St. Marys

New street lights have been erected throughout the business section, and it is intended to entirely revise the method of lighting in the residential part. This discontinuance of the use of 60-cycle apparatus, and the erection of new power and lighting feeders, will eliminate much of the loss. Orders have been placed through the Commission for new street light fixtures and station equipment.

The local Commission are also considering the purchase of a gasoline engine driven centrifugal pump to replace the steam, as an auxiliary to their electrically operated pump.

St. Thomas

This municipality had a load of 1,923 h.p. for the month of September, showing an increase of approximately 16 per cent. in the last year.

The load factor is high and the operating reports show very satisfactory results for the year.

A large number of new lighting customers have been added and a few power customers. About 30 customers are using electric stoves for their cooking and the results to the customers have been very satisfactory. It is expected a large number will take advantage of the low lighting rates to use electricity for cooking in the coming year.

As this system required extra station equipment it was decided by the local Hydro Commission to consult us on their requirements for a station site, station building and extra station equipment.

This was looked into and information forwarded to them and the local Hydro Commission will erect a new sub-station on the south-west corner of Catharine and Gas Streets in the coming year; plans and specifications are now being prepared by us to cover this work.

It is expected the Waterworks Department will take advantage this coming year of the low power rates and use electric power for pumping.

During the year a new street lighting system was installed on Talbot Street. The old wooden trolley poles were replaced with suitable steel trolley poles and ornamental brackets installed thereon. An overhead No. 6 weatherproof D.B. wire carries the 6.6 amp. current to the 500 watt gas-filled series lamps.

Financial statements still show a large surplus in the face of a large reduction in rates made at the beginning of the year.

Toronto

At the request of the Commissioners of the Toronto Hydro-Electric system, a full report was made and submitted in connection with the removal of lines of the T. H. E. system from Lansdowne Avenue, the removal of these poles being made necessary by the extension of the Civic car lines on this street.

This report shows details of the cost of making the proposed change and fixing the responsibility for same.

Tilbury

The distribution system which was purchased by the municipality from a private owner and was remodelled under the direction of the Commission's engineers was put into operation in March, the rates being greatly reduced from those in use previously. The operation for the year shows the system to be in good financial condition.

Negotiations are at the present time under way for supplying from the Tilbury station power for operating drainage propositions in the district.

Welland

The power load on the Welland municipal station has been doubled during the year, and the number of lighting customers shows a substantial increase. The Commission has given considerable assistance to the Welland Hydro-Electric system in connection with prospective power customers and plans are being prepared for additional sub-station capacity.

An additional customer outside the municipality of Welland commenced taking approximately 2,000 h.p. from the Commission during the early part of the year.

The present conditions indicate that in the near future a very large amount of power will be sold in the Welland district.

Wallaceburg

The distribution system which was purchased from the Premier Electric Light Company, of Wallaceburg, was remodelled under the supervision of the Commission and put into operation in February. The rates recommended for use were greatly reduced from those previously in force.

The Hydro-Electric system and the new waterworks system have been placed under the one management, the office building having been erected for the municipality by the Commission and is an extension of the new sub-station building.

The electrically driven pumps in the new pumping station will be put into operation early next year, and prospects indicate a considerable power load in this municipality in the near future.

Walkerville

The Walkerville system has shown a good steady growth as to number of customers connected, and the amount of power taken from the Commission has steadily increased until at the present time the municipality's peak is approximately 800 horse-power.

A number of extensions to the municipality's street lighting system were made during the year. Several rural extensions were also made and a line built from Walkerville to the municipality of Tecumseh, a large number of customers being connected to this line along the Detroit River Road in Sandwich East Township.

The extensions in Sandwich East Township are operated by Walkerville as part of their system.

A complete street lighting system has been installed in Ford City, the system of which municipality is being operated also by Walkerville as part of their system.

Wellesley

Requests from the Police Village of Wellesley, regarding a supply of power, have been received, and estimates prepared and submitted.

Information has been given by the Commission's engineers and others, and by-laws will be submitted at the January elections.

It is proposed to serve Wellesley from the Baden station, the price based on 100 h.p. at 4,000 volts being $39.96 per h.p. year. A money by-law for $7500 for the distribution system is also being voted upon.

Williamsburg

A contract for 20 horse-power was signed and a distribution system in Williamsburg was constructed by the Commission for the village. A 2,300 volt line was run from Morrisburg and power supplied therefrom temporarily.

Windsor

The financial report of the Windsor Hydro-Electric system for the year shows a growth of business beyond expectations, and the system is now in good financial condition. At the present time they have approximately 3,000 customers connected to the system, and have a peak load on the municipal station of approximately 1,200 h.p.

The ornamental street lighting system has been completed during the year and there are at present installed in the municipality two hundred and seventy-five 14 ft. ornamental cast iron standards equipped with 500 watt lamps and seventeen hundred 10 ft. 6 in. ornamental cast iron standards equipped with 100 c.p. lamps. A series system of lighting is used and nitrogen-filled lamps are used throughout.

The Windsor Hydro-Electric system is operating a system which has been recently built under the Commission's supervision for the municipality of Sandwich, the customers in Sandwich being handled as part of the Windsor system. The number of power customers is increasing steadily and Windsor should soon have a large power load.

Wyoming

At the request of the village council the engineers of the Commission prepared an estimate of the cost of constructing a new distribution system in the municipality, a report in connection with which has been submitted, and preparations have been made to submit the Hydro by-laws to the people at the coming municipal elections.

According to estimate prepared by the Commission's engineers, Wyoming can be supplied with 100 h.p. at the rate of $38.34 per h.p. per year.

MUNICIPAL ACCOUNTS

The actual results from municipal distribution of Hydro power are shown in the tables submitted in this section. In accordance with the requirements of the Ontario Government the municipal year, with the exception of London, ends on December 31st. The tables which follow under "Municipal Accounts" cover the calendar year ending December 31st, while all other sections of the annual report deal with the fiscal year ending October 31st.

The work of standardizing the electrical accounts of the Hydro-Electric municipalities commenced in 1912 has been continued. During the year accounting systems were established at Bothwell, Burford, Bolton, Brechin, Chatham, Comber, Dresden, Dutton, Delaware, Dorchester, Embro, Lucan, Lynden, Lambeth, Mt. Brydges, Princeton, Pt. McNicoll, Simcoe, Strathroy, St. George, Tilbury, Thamesville, Victoria Harbor, Wallaceburg, Waterford, Waubaushene and Williamsburg, and the local officers instructed in the proper handling of the books.

A periodical inspection has been made of the electrical accounts of all Hydro-Electric municipalities, our accountants assisting the local officers by suggesting better or simpler methods of office routine, and in the case of smaller towns and villages, where the utility is in charge of men of little or no bookkeeping experience, actually doing most of the accounting.

The system of monthly balance sheets and operating reports inaugurated has enabled the Provincial Commission to keep in close touch with the local conditions, and from the local reports and other data which is collected or worked up by the auditors of municipal accounts, the capital costs and operating expenses are periodically divided into the principal revenue accounts, domestic light, commercial light, power and street light, these in turn being set against the respective revenues for the purpose of rate adjustment.

From this data the Hydro-Electric Power Commission is in a position to authorize and enforce a schedule of selling rates in each municipality which makes each of the above-named revenue departments self-supporting, so that an excessively high rate in one does not take care of a deficit in another, to the manifest advantage of the latter.

The eight statistical reports which follow were prepared to give a comprehensive view of the present status of the electric utilities and the result of operation in the ninety-nine municipalities in which the service has been installed long enough to justify a report.

The municipalities have been listed in the order of their size according to Municipal Bulletin No. 9, Bureau of Industries of the Ontario Department of Agriculture; the populations are shown and the statistics are prepared to permit an intelligent comparison of operating results in municipalities where conditions are similar. This is resulting in a friendly rivalry between the municipalities for an increased load, an efficient and economical administration, and an intelligent effort to improve the load factor, which is so essential to low selling rates.

Statement "A" is a comparative condensed balance sheet of each municipality as at December 31st, 1914, and December 31st, 1915, showing the plant cost in natural subdivisions, and other items making up the total assets. The true or quick liabilities, such as debenture balance, bank overdraft and accounts payable, are totalled separately before including such reserve accounts as debentures paid, sinking fund reserve, depreciation reserve and surplus. In this way the relative increase

in plant value and net debt during the year in any municipality can be quickly determined.

The percentage of net debt to plant cost at the end of each year has been worked out, and shows a marked decrease. Special attention is called to this very interesting and gratifying feature.

All of the accounts appearing in the balance sheet under "Reserves," such as "Debentures Paid," "Sinking Fund Reserve," "Depreciation Reserve," and "Surplus," might properly be called surplus and represent the gross profit from operation.

Up to this year the annual additions and extensions to plants financed from surplus revenue have always exceeded the depreciation charge, thus obviating any need for an actual cash depreciation fund. However, as the plant extensions in the older Hydro municipalities are becoming quite nominal, the difference between the cost of such extensions and the depreciation charge will be set aside in cash and maintained as a separate account.

Statement "B" is a condensed operating report for the year ending December 31st, 1915, showing the result in each municipality. The population and the number of consumers in each class is also given to facilitate comparisons. In some cases where the power was turned on subsequent to January 1st, the proportion of the annual fixed charges corresponding to the period of operation has been used, and in other municipalities where the operation covers a very short period, and no actual payment has been made, the fixed charges have been omitted entirely to simplify the accounting in future years and avoid the necessity for annual adjustments.

In some municipalities where it requires from six weeks to two months to close the books for the year, the figures are taken from the trial balances, which are substantially correct, but subject to revision on final audit.

Ordinarily a municipality is not considered self-sustaining unless the revenues are sufficient to meet all operation and maintenance charges, all the interest, sinking fund or principal payments on debentures, and additions to plant to the extent of five per cent. of the tangible capital in lieu of depreciation. This percentage is based on the usual type of construction; special features, such as concrete poles or underground work, or an unusually large amount of overhead work would require a lower or higher rate.

A study of Statement "B" will show that in twelve of the ninety-nine municipalities included in the report, the revenue was insufficient to take care of the operation expenses and debenture charges. The losses are being carried forward as charges against future operation. In the majority of cases, the unfavorable showing is due to accumulated losses during the early months of operation before a balanced and profitable load was secured. The net credit balance of surplus in the ninety-nine municipalities during the year reached the magnificent sum of $702,540.66, and the systems are now serving 120,828 consumers.

Statement "C" shows in detail the revenues and expenses which are summarized in Statement "B," comparative with the operation in other municipalities of the same size for 1913, 1914 and 1915. In comparing the cost of power purchased, the varying price per horsepower paid must be taken into consideration.

Statement "D," showing the revenue for the years 1912, 1913, 1914 and 1915, and the number of customers in each class of service at the end of the year, is intended to illustrate the rapid expansion of the service in the municipalities where the operation covers a period of two years or longer.

It is interesting to note the healthy financial condition of the utilities and the

steady growth of revenue, in the face of a constantly decreasing scale of rates, as shown by Statements " C " and " D."

Statement " E " is prepared to show the approximate installation and annual cost per lamp and per capita of the street lighting service in cities, towns and incorporated villages where Hydro service has been installed. The figures are for the calendar year ending December 31st, 1915.

Statement " F " will show the actual net cost per kw. hr. in domestic and commercial service, including all floor space and installed capacity loadings, and, where it has been possible to compute it, approximately what this service would have cost at the rates in effect prior to the introduction of Hydro, and the hypothetical saving to light users only. The net kw. hr. cost in 1914 is also shown.

Statements " G " and " H " show comparatively the cost of power to the municipalities, the selling rates for power and light in 1912, 1913, 1914 and 1915, and the recommended rates for 1916.

In order that the effect of the Hydro co-operative scheme on the Hydro municipalities as a whole may be clearly shown, the municipal balance sheets for the past three years have been consolidated, and the operating reports have been treated in the same manner for four years.

CONSOLIDATED OPERATING REPORTS.

Year Ending Dec. 31st.	1912	1913	1914	1915
Number of Municipalities included in report	28	45	69	99
Operating and maintenance expense	$1,086,135 00	$1,516,613 32	$2,012,754 07	$2,552,832 50
Debenture charges and interest	291,033 00	525,054 44	661,949 23	814,443 67
Total Annual Expense	$1,377,168 00	$2,041,667 76	$2,674,703 30	$3,367,276 17
Total Revenue	1,617,674 00	2,617,439 51	3,433,936 16	4,069,816 83
Surplus for year	$240,506 00	$575,771 75	$739,232 86	$702,540 66
Depreciation charge	124,992 47	262,675 21	357,883 31	(a) 240,644 04
Surplus less Depreciation charge	$159,219 06	$313,096 54	$401,349 55	(a) $461,896 62
Accumulated surplus invested in plant extension	$284,211 53	$859,983 28	$1,601,167 42	$2,647,070 52
Estimated saving to light users only during year	.....	1,576,500 00	1,694,300 00	.....
Number of consumers, light..	33,568	63,157	93,179	117,010
" " power.	1,399	2,532	3,565	3,818
Total number of consumers	34,967	65,689	96,744	120,828

	Dom. Lt.	Com'l Lt.
Highest cost per kw-hr. in 1915	11.5	12.2
Lowest cost per kw-hr. in 1915	2.4	1.9
Average cast per kw-hr in 1915	3.9	3.1
Average cost per kw-hr. prior to Hydro	9.3	10.4

Note.—(a) The Depreciation Reserve in Port Arthur and Toronto is included in " Surplus " in the 1915 report.

The operating reports show that while the municipalities have invested $17,683,264.07 in distributing systems and executive equipment, and have assumed liability for an annual fixed charge of $814,443.67, the surplus was almost sufficient

to take care of the debenture charges for another year. Bearing in mind that these fixed charges include the sinking fund and debenture retiring payments, as well as interest, so that the present consumers are not only paying the ordinary operation, maintenance and interest charges, but are retiring about 3.3% of the capital debt each year, thus automatically providing for depreciation regardless of any special provision which may be made in the accounts, the phenomenal success of the enterprise from the municipal standpoint is apparent.

These statements show not only the status of the utility in each municipality, but of all the municipalities in the Niagara, Severn, Wasdell's Falls, St. Lawrence, Ottawa and Port Arthur systems consolidated into one unit.

The result is of particular interest and value, as it is the final answer of the municipalities to their experiment in the co-operative transmission and municipal distribution of Hydro power.

Consolidated Balance Sheets.

Year Ending Dec. 31st.	1913	1914	1915
Number of Municipalities included....	45	69	99
Assets:			
Lands and Buildings	$626,707 34	$791,732 20	$873,838 18
Sub-Station Equipment	1,090,875 69	1,476,087 84	1,582,062 56
Distribution System, Overhead ...	2,690,834 74	3,422,763 93	4,234,626 05
" " Underground	644,514 24	807,153 53	928,420 77
Line Transformers	615,546 20	787,613 52	981,754 70
Meters	840,606 64	1,172,475 11	1,418,165 08
Street Lighting Equipment, Reg..	900,614 80	1,071,255 37	1,309,628 49
" " Ornamental	62,765 34	270,386 55	197,644 82
Miscel. Equipment and Const. Exp.	866,551 89	2,062,035 90	1,701,182 66
Steam or Hydraulic Plant	1,401,175 28	420,108 33	461,651 60
Old Plant	341,277 00	478,881 56	415,518 23
Other Miscellaneous Assets	.....	140,631 56	768,854 63
Total Plant	$10,081,469 16	$12,901,125 40	$14,873,347 77
Bank and Cash Balance	$450,887 97	$422,350 12	$284,653 96
Inventories	344,487 95	561,873 08	602,920 69
Accounts Receivable	540,274 58	615,226 76	726,556 76
Sinking Fund	431,747 27	625,217 03	868,983 78
Other Assets	58,959 93	123,410 97	326,801 11
Total Liquid Assets	$1,826,357 70	$2,348,077 96	$2,809,916 30
Total Assets	$11,907,826 86	$15,249,203 36	$17,683,264 07
Liabilities:			
Debenture Balance	$8,711,308 37	$10,678,078 36	$11,831,811 03
Accounts Payable	1,553,711 45	1,682,150 29	2,040,038 01
Bank Overdraft	160,919 16	228,622 50	292,106 44
Other Liabilities	42,412 81	113,838 66	37,388 31
Total Liabilities	$10,468,351 79	$12,702,689 81	$14,201,343 79
Reserves:			
Debentures Paid	$202,751 26	$320,129 10	$394,466 22
Sinking Fund Reserve	431,747 27	625,217 03	868,983 78
Depreciation Reserve	478,145 88	850,618 07	817,182 70
Surplus	326,830 66	750,549 35	1,401,287 58
Total Reserves	$1,439,475 07	$2,546,513 55	$3,481,920 28
Total Liabilities and Reserves	$11,907,826 86	$15,249,203 36	$17,683,264 07
Percentage of Net Debt to Total Assets	88.0%	83.0%	80.3%

An apparent discrepancy in the amount of the Depreciation Reserve in 1915 is due to this account in Toronto and Port Arthur being included in " Surplus," but as a matter of fact all these " Reserves " are simply " Surplus " under another name.

The steady decrease in the percentage which the net debt balance bears to the total assets from 92.5% in 1912; 88.0% in 1913; 83.0% in 1914 to 80.3% in 1915 dispels all doubt as to the future of the enterprise.

STATE

Comparative Condensed Balance Sheets of Electric Departments

Municipality	Toronto		Ottawa	
Population	470,144		101,785	
——	1914	1915	1914	1915
ASSETS	$ c.	$ c.	$ c.	$ c.
Lands and Buildings	363,945 40	373,733 08	83,081 13	83,084 17
Sub-Station Equipment	740,980 33	729,143 69	100,341 34	102,612 38
Distribution System, Overhead	1,184,748 21	1,554,253 98	293,583 97	318,704 90
" " Underground	603,500 90	685,557 44	70,254 11	77,771 77
Line Transformers	328,203 35	394,525 78	79,889 90	89,194 77
Meters	490,590 08	564,238 32	92,352 76	100,689 39
Street Light Equipment, Regular	677,878 41	795,750 64	52,598 02	55,895 88
" " Ornamental	.....	.....	29,957 84	29,957 84
Miscel. Equip. and Construction Exp.	737,276 56	1,231,753 03	24,695 29	29,293 13
Steam or Hydraulic Plant	i 951,765 56	e 50,106 14	.....	.....
Old Plant	e 104,486 15	f 505,646 83	5,097 57	.....
Total Plant	6,183,374 95	6,884,708 93	831,851 73	887,204 23
Bank and Cash Balance	263,840 21	84,220 22	30,443 65	66,323 19
Inventories	409,177 65	440,845 89	7,421 55	8,274 30
Accounts Receivable	379,768 60	344,828 27	20,000 00	16,320 77
Sinking Fund	369,219 16	480,949 94	83,026 78	99,389 59
Other Assets	76,364 37	73,657 99	.....	.....
Total Assets	7,681,744 94	8,309,211 24	972,743 71	1,077,512 08
LIABILITIES AND RESERVES				
Liabilities				
Debenture Balance	5,650,000 00	6,300,000 00	650,000 00	700,000 00
Accounts Payable	1,162,358 98	848,851 48	3,324 20	12,665 18
Bank Overdraft	.....	.....	.....	.....
Other Liabilities	85,143 50	.....	.....	.....
Total Liabilities	6,897,502 48	7,148,851 48	653,324 20	712,665 18
Reserves				
Debentures Paid	.....	.....	.....	.....
Sinking Fund Reserve	369,219 16	480,949 94	83,026 78	99,389 59
Depreciation Reserve	252,248 48	.....	189,378 30	222,378 30
Surplus	162,774 82	679,409 82	47,014 43	43,079 01
Total Liabilities and Reserves	7,681,744 94	8,309,211 24	972,743 71	1,077,512 08
Percentage of Net Debt to Total Assets	90.0	86.0	67.2	66.1

MENT "A"

of Hydro Municipalities as at December 31st, 1914 and 1915

Hamilton 101,344		London 56,358		Brantford 26,389		Windsor 22,993	
1914	1915	1914	1915	1914	1915	1914	1915
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
58,738 46	59,020 10	66,912 37	68,220 17	6,546 22	11,069 21	8,397 66	11,605 94
80,956 00	89,694 10	124,036 63	144,439 34	12,048 42	38,710 52	9,922 45	30,862 05
268,751 26	287,116 34	253,981 24	279,633 40	98,680 18	100,808 23	39,081 31	112,368 72
126,692 41	156,569 93	352 43	352 43	.....	.....	.....	.....
65,791 02	88,927 58	29,823 63	35,324 59	14,396 85	18,750 49	8,964 30	14,516 02
104,274 72	125,792 86	98,581 61	110,487 46	15,209 76	18,837 13	4,842 11	17,839 38
89,943 14	92,520 48	35,664 34	38,441 58	15,167 68	15,909 64	7,458 57	119,163 76
67,489 03	.....	.....	.....	36,410 50	33,053 38	67,661 39	33,621 09
116,390 57	118,426 02	44,878 01	47,031 27	17,569 90	21,357 12	31,352 18	42,499 88
.....	.....	.....	.....	.....	.....	.....	.....
2,000 00	2,000 00	.....	.....	.....	.....	.....	h 6,548 02
981,026 61	1,020,067 41	654,230 26	723,930 24	216,029 51	257,995 72	177,679 97	389,024 86
.....	.....	8,285 53	24,567 86	55 78	1,413 88	17,187 01	3,858 52
33,685 18	34,450 25	28,124 06	36,561 72	709 27	552 51	3,739 81	8,019 99
51,137 23	95,138 39	40,611 55	47,573 16	1,756 78	1,252 91	2,047 85	720 96
28,369 94	50,189 06	20,932 37	30,900 36	3,862 00	10,229 50	.....	2,791 18
1,318 58	3,217 39	.....	210,000 00	.....	.....	507 13	.....
1,095,537 54	1,203,062 50	752,183 77	1,073,533 34	222,413 34	271,444 52	201,161 77	404,415 51
840,000 00	840,000 00	456,026 44	661,010 13	152,500 00	222,500 00	201,161 77	343,477 40
77,066 26	63,298 69	127,639 90	168,450 68	.....	.....	.....	50,664 05
73,508 89	110,745 32	.....	.....	57,877 24	16,452 58	.....	.....
18,093 94	23,607 37	864 00	1,571 00	.....	.....	.....	375 00
1,008,669 09	1,037,651 38	584,530 34	831,031 81	210,377 24	238,952 58	201,161 77	394,516 45
.....	.....	25,873 56	30,889 87	.....	.....	.....	1,783 01
28,359 94	50,189 06	20,932 37	30,900 36	3,862 00	10,229 50	.....	2,791 18
30,085 01	55,893 88	66,568 52	98,604 15	6,000 00	15,408 22	.....	.....
28,413 50	59,328 18	54,278 98	82,107 15	2,174 10	6,854 22	.....	5,324 87
1,095,537 54	1,203,062 50	752,183 77	1,073,533 34	222,413 34	271,444 52	201,161 77	404,415 51
91.8	86.3	77.7	77.3	93.8	88.1	100.0	97.5

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

Municipality	Peterboro		Berlin	
Population	20,653		19,056	
——	1914	1915	1914	1915
ASSETS	$ c.	$ c.	$ c.	$ c.
Lands and Buildings	.....	15,198 33	29,512 86	31,068 71
Sub-Station Equipment	.....	.....	63,952 83	72,450 20
Distribution System, Overhead	364 44	1,354 73	78,373 58	84,877 71
" " Underground	.....	.....	6,353 68	6,785 40
Line Transformers	847 26	3,051 94	26,593 35	29,079 41
Meters	1,924 37	12,365 76	33,361 91	38,768 09
Street Light Equipment, Regular	5 04	32 72	19,532 87	20,242 17
" " Ornamental	27,015 99	.....	.....	.....
Miscel. Equip. and Construction Exp.	5,049 16	5,266 12	6,229 29	6,016 95
Steam or Hydraulic Plant	.....	.....	.....	.....
Old Plant	100,000 00	136,050 95	56,873 81	56,879 74
Total Plant	135,206 76	173,320 55	320,784 18	346,168 38
Bank and Cash Balance	2,879 81	.....	15,474 46	11,617 59
Inventories	.....	.....	4,632 36	6,371 06
Accounts Receivable	6,817 23	5,810 98	11,219 74	17,613 09
Sinking Fund	2,139 61	4,364 80	.....	.....
Other Assets	3 49	.....	6,867 25	.....
Total Assets	146,046 90	183,496 33	358,977 99	381,770 12
LIABILITIES AND RESERVES				
Liabilities				
Debenture Balance	120,000 00	120,000 00	250,817 14	243,675 27
Accounts Payable	11,905 40	27,302 24	9,332 53	10,125 09
Bank Overdraft	7,015 44	10,665 48	.....	.....
Other Liabilities	4 98	5,500 00	.....	.....
Total Liabilities	138,926 37	163,467 72	260,149 67	253,800 36
Reserves				
Debentures Paid	.....	.....	49,332 86	56,474 73
Sinking Fund Reserve	2,139 61	4,364 80	.....	.....
Depreciation Reserve	.....	7,500 00	23,864 84	34,803 24
Surplus	4,980 92	8,163 81	25,630 62	36,691 79
Total Liabilities and Reserves	146,046 90	183,496 33	358,977 99	381,770 12
Percentage of Net Debt to Total Assets	95.1	90.0	72.5	66.5

"A"—Continued

of Hydro Municipalities as at December 31st, 1914 and 1915

Port Arthur [a] 18,324		St. Catharines 17,296		Stratford 17,006		Guelph 16,799	
1914	1915	1914	1915	1914	1915	1914	1915
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
.....	.....	1,147 42	1,492 42	16,950 60	23,597 29	19,298 41	19,400 41
19,857 44	1,056 49	3,531 72	5,276 84	21,213 33	21,409 13	40,360 20	40,571 05
194,657 61	201,080 80	49,752 84	68,349 25	81,559 81	85,523 21	50,822 17	56,657 84
.....	.....	.....	1,383 80	.....	.....	.....	.....
10,177 83	10,848 93	8,364 86	9,245 24	14,441 43	14,726 43	8 255 04	9,966 00
41,521 38	42,714 41	8,546 05	11,031 05	19,347 05	23,722 21	19,478 59	22,836 82
27,000 00	27,000 00	2,584 82	6,501 94	5,971 43	5,971 43	22,852 99	25,553 60
.....	.....	.....	.....	1,976 04	22,175 22	.....	.....
8,367 20	8,803 41	8,689 91	19,896 25	7,848 12	7,848 12	6,655 21	6,777 76
357,210 24	378,798 55	.....	.....	.....	.....	a36,145 41	a36,301 89
.....	.....	30,008 75	75,554 13	11,187 00	11,187 00	.....	.....
658,791 70	670,302 59	112,626 37	198,730 92	180,494 81	216,160 04	208,868 02	218,065 37
.....	13,363 06	25 00	25 00	7,502 30	408 17	14,308 61	17,752 16
172 73	240 22	4,436 30	986 60	886 78	2,759 65	11,952 32	12,374 40
19,325 03	26,178 99	1,349 57	2,821 50	2,982 86	13,178 01	9,764 63	7,646 42
23,390 23	68,476 51	2,068 29	4,219 31	10,091 12	13,553 36	12,993 99	15,741 28
	164 62	.....	.....	2,083 82	3,243 74	.....	.....
701,827 69	778,726 01	120,505 53	206,783 34	204,041 69	249,302 97	252,887 57	271,579 63
533,068 30	568,758 70	.....	116,000 00	144,090 00	161,710 00	127,417 09	125,355 51
9,773 73	.....	116,521 26	74,239 94	2,775 18	20,255 48	4,465 55	5,868 23
3,314 93	.....	.....	1,288 82	.....	7,319 21	.....	.....
6,956 46	10,031 67	.....	.....	.....	.....	.....	.....
553,113 42	578,790 37	116,521 26	191,528 76	146,865 18	189,284 69	131,882 64	131,223 74
48,431 70	58,823 83	.....	.....	19,710 00	24,090 00	17,582 90	19,644 48
23,390 23	68,476 51	2,068 29	4,219 31	10,091 12	13,553 36	12,993 99	15,741 28
16,469 79	.....	850 00	8,100 00	17,124 92	22,374 92	48,046 12	58,546 12
60,422 55	72,635 30	1,065 98	2,935 27	10,250 47	.....	42,381 92	46,424 01
701,827 69	778,726 01	120,505 53	206,783 34	204,041 69	249,302 97	252,887 57	271,579 64
78.8	.....	96.7	92.6	72.0	75.9	52.1	48.3

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

Municipality	St. Thomas		Chatham	Galt	
Population	16,794		12,714	12,060	
——	1914	1915	1915	1914	1915
ASSETS	$ c.	$ c.	$ c.	$ c.	$ c.
Lands and Buildings	9,709 11	12,351 59	18,320 18	11,722 68	12,201 05
Sub-Station Equipment	33,857 96	35,337 54	6,055 12	20,513 66	22,082 47
Distribution System, Overhead	62,139 41	67,507 25	45,955 34	91,467 50	105,277 47
" " Underground	.....	.....	.....	.....	.....
Line Transformers	12,116 30	13,373 59	9,810 16	16,296 09	17,795 56
Meters	21,617 04	24,058 50	9,522 19	24,437 73	28,938 43
Street Light Equipment, Regular	11,797 57	12,030 48	6,282 21	7,982 73	8,484 27
" " Ornamental	.....	6,749 83	20,208 57	39,875 76	50,697 06
Miscel. Equip. and Construct'n Exp.	5,622 48	6,423 66	13,627 39	8,528 63	11,192 06
Steam or Hydraulic Plant	.....	.....	.....	.....	.....
Old Plant	5,213 84	4,289 96	.....	.....	.....
Total Plant	162,073 71	182,122 40	129,781 16	220,824 78	256,668 37
Bank and Cash Balance	9,466 39	22,597 51	691 84	.....	.....
Inventories	794 80	1,879 27	7,307 45	3,456 49	1,591 89
Accounts Receivable	8,991 16	10,960 39	1,308 20	.....	.....
Sinking Fund	.....	.....	.....	14,902 70	20,459 43
Other Assets	17,420 42	86 25	[illegible]	.....	.....
Total Assets	198,736 48	217,645 82	139,810 12	239,183 97	278,719 69
LIABILITIES AND RESERVES					
Liabilities					
Debenture Balance	90,833 51	109,146 67	88,861 60	136,000 00	165,999 55
Accounts Payable	8,117 82	8,888 40	26,147 08	.....	.....
Bank Overdraft	.....	.....	22,853 04	48,762 31	39,483 55
Other Liabilities	.....	.....	810 00	.....	.....
Total Liabilities	98,951 33	118,035 07	138,671 72	184,762 31	205,483 10
Reserves					
Debentures Paid	20,166 49	23,937 76	1,138 40	.....	.....
Sinking Fund Reserve	.....	.....	.....	14,902 70	20,459 43
Depreciation Reserve	47,927 04	56,662 04	.....	25,500 00	35,500 00
Surplus	31,691 62	19,010 95	.....	14,018 96	17,277 16
Total Liabilities and Reserves	198,736 48	217,645 82	139,810 12	239,183 97	278,719 69
Percent'ge of Net Debt to Total Assets	49.8	54.2		77.2	70.4

"A"—Continued

of Hydro Municipalities as at December 1914 and 1915

Woodstock 10,265		Welland 7,243		Barrie 7,088		Midland 6,375	
1914	1915	1914	1915	1914	1915	1914	1915
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
7,331 95	7,331 95	6,172 68	6,503 78	12,034 61	12,034 61	4,780 69	4,780,69
27,685 13	27,685 13	8,981 25	15,846 88	20,536 29	20,540 44	8,407 78	8,407 78
34,334 28	36,335 71	40,830 86	43,624 07	18,420 33	19,824 30	30,697 06	31,627 90
.....	.....	.....	.....	.....	.....	.....	.....
18,253 32	20,173 06	11,191 63	11,743 46	3,238 49	3,617 24	7,573 63	8,640 06
15,392 17	16,994 24	8,246 18	8,549 11	14,119 96	15,208 25	10,495 06	11,236 62
10,233 97	10,328 77	1,974 99	2,269 59	3,179 97	3,789 52	3,421 85	3,421 85
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	6,492 54	7,348 74	757 49	757 49	3,500 58	3,500 58
15,743 62	15,743 62	.....	.....	31,062 48	31,062 48	.....	.....
15,835 26	15,835 26	.....	.....	.....	.....	7,057 84	7,057 84
144,809 70	150,427 74	83,890 13	95,885 63	103,349 62	106,834 33	75,934 49	78,673 32
7,391 38	13,953 07	535 18	1,803 40	3,721 03	2,923 18	7,439 46	10,455 21
705 35	113 12	720 12	.....	3,441 72	5,257 50	147 23	311 87
.....	.....	2,535 18	16,936 34	5,426 07	5,072 17	2,500 93	4,373 10
32,536 50	36,347 74	1,961 30	3,566 00	.....	.....	.....	.....
.....	1,500 00	.....	.....	.....	.....	.....	.....
185,442 93	202,341 17	89,641 91	118,191 37	115,938 44	120,087 18	86,022 11	93,813 50
107,385 63	107,385 63	65,000 00	90,000 00	52,170 97	48,437 13	40,788 82	38,562 52
.....	.....	22,232 78	16,322 18	1,260 94	1,434 21	600 00	800 00
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	4 22	.....	.....	.....
107,385 63	107,385 63	87,232 78	106,322 18	53,436 13	49,871 34	41,388 82	39,362 52
.....	.....	.....	.....	34,829 03	38,562 87	12,961 18	15,187 48
32,536 50	36,347 24	1,961 30	3,566 00	.....	.....	.....	.....
15,892 40	22,483 98	.....	4,425 00	6,850 00	10,350 00	9,000 00	12,400 00
29,628 40	36,124 32	447 83	3,878 19	20,823 28	21,302 97	22,672 11	26,863 50
185,442 93	202,341 17	89,641 91	118,191 37	115,938 44	120,087 18	86,022 11	93,813 50
57.9	53.1	97.3	90.0	46.1	41.5	48.1	42.0

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

Municipality	Collingwood		Ingersoll	
Population	6,361		5,200	
——	1914	1915	1914	1915
ASSETS	$ c.	$ c.	$ c.	$ c.
Lands and Buildings	4,343 60	4,343 60	3,057 57	3,057 57
Sub-Station Equipment	4,352 80	4,352 80	10,232 56	10,232 56
Distribution System, Overhead	23,881 01	25,104 34	30,046 34	31,051 22
" " Underground	.....	.....	.....	.....
Line Transformers	4,814 05	5,219 75	7,734 50	7,898 75
Meters	8,292 84	9,648 56	9,952 66	10,542 34
Street Light Equipment, Regular	2,404 29	2,446 35	2,336 01	2,336 01
" " Ornamental	.....	.....	.....	.....
Miscel. Equip. and Construction Exp.	5,043 39	5,069 51	8,253 30	8,253 30
Steam or Hydraulic Plant	.....	.....	.....	.....
Old Plant	5,127 75	4,415 17	22,368 53	22,334 21
Total Plant	58,259 73	60,600 08	93,981 47	95,705 96
Bank and Cash Balance	882 84	2,643 45	.....	.....
Inventories	429 65	175 13	1,305 44	404 29
Accounts Receivable	6,906 21	7,412 52	5,881 07	7,757 02
Sinking Fund	.....	.....	6,498 21	8,388 82
Other Assets	.....	.....	.....	.....
Total Assets	66,478 43	70,831 18	107,666 19	112,256 09
LIABILITIES AND RESERVES				
Liabilities				
Debenture Balance	35,362 35	33,295 21	79,800 00	79,800 00
Accounts Payable	4,165 85	2,689 50	985 50	1,824 74
Bank Overdraft	.....	.....	5,452 88	2,130 08
Other Liabilities	.....	.....	.....	.....
Total Liabilities	39,528 20	35,984 71	86,238 38	83,754 82
Reserves				
Debentures Paid	4,047 94	6,115 08	.....	.....
Sinking Fund Reserve	.....	.....	6,498 21	8,388 82
Depreciation Reserve	4,790 00	7,390 00	6,030 00	9,230 00
Surplus	18,112 29	21,341 39	8,899 60	10,882 45
Total Liabilities and Reserves	66,478 43	70,831 18	107,666 19	112,256 09
Percentage of Net Debt to Total Assets	59.5	50.5	80.1	76.8

"A"—Continued

of Hydro Municipalities as at December 31st, 1914 and 1915

Preston 4,942		Waterloo 4,908		Dundas 4,687		Goderich 4,676	
1914	1915	1914	1915	1914	1915	1914	1915
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
.....	.....	4,683 07	4,740 85	137 92	2,803 50	12,874 90	12,915 81
13,556 37	13,667 48	17,955 85	18,146 58	2,174 12	6,527 27	5,067 27	7,266 83
32,190 73	36,090 52	33,814 17	35,280 24	36,245 57	38,889 98	23,277 27	24,131 48
.....	.....	.....	.....	.....	.....	.....	.....
11,539 00	12,800 35	7,033 53	8,992 44	6,338 53	7,851 91	6,281 16	6.587 57
9,939 77	11,085 14	8,342 63	9,566 70	6,971 99	7,226 28	10,292 45	9,970 58
1,909 53	2,561 53	5,133 01	5,191 76	1,708 19	1,708 67	4,442 79	4,495 29
.....	.....	.....	.....	.....	.....	.....	.....
4,910 22	5,255 35	1,181 50	1,266 56	5,509 47	5,984 67	1,967 26	1,967 26
.....	.....	2,483 64	2,483 64	.....	.....	.....	.....
23,549 22	23,549 22	10,082 50	9,666 15	2,110 38	2,110 38	10,005 00	9,230 65
97,594 84	105,009 59	90,709 90	95,334 92	61,196 17	73,102 66	74,208 10	76,565 47
.....	.....	.....	37 27	.....	.....	1,386 34	161 43
1,330 03	812 11	1,068 69	1,559 42	1,159 87	1,810 49	393 79	232 87
5,938 37	5,139 61	3,342 01	5,206 24	1,855 86	.....	1,463 38	7,375 10
.....	.....	1,440 00	1,728 00	.....	.....	2,651 50	2,767 40
.....	.....	2,203 90	.....	.....	.....	.....	.....
104,863 24	110,961 31	98,764 50	103,865 85	64,211 90	74,913 15	80,103 11	87,102 27
71,055 09	67,984 96	63,943 13	62,915 67	51,728 16	50,905 67	54,542 69	52,925 75
1,791 90	2,073 75	841 87	1,440 00	.....	.....	13	.....
5,890 54	8,735 25	1,182 27	.....	3,316 39	11,155 46	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
78,737 53	78,793 96	65,967 27	64,355 67	55,044 55	62,061 13	54,542 82	52,925 75
6,810 42	9,880 55	2,056 87	3,084 33	1,271 84	2,094 33	1,545 36	3,162 30
.....	.....	1,440 00	1,728 00	.....	.....	2,651 50	2,767 40
9,748 34	13,548 34	11,450 00	15,450 00	4,183 00	7,083 00	2,920 00	6,670 00
9,566 95	8,738 46	17,850 36	19,247 85	3,712 51	3,674 69	18,443 43	21,576 82
104,863 24	110,961 31	98,764 50	103,865 85	64,211 90	74,913 13	80,103 11	87,102 27
75.1	71.0	66.8	63.5	85.7	82.3	68.1	60.7

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

Municipality	Walkerville		Paris	
Population	4,565		4,383	
——	1914	1915	1914	1915
ASSETS	$ c.	$ c.	$ c.	$ c.
Lands and Buildings	14,291 69	16,837 66	626 26	7,626 26
Sub-Station Equipment	6,567 50	18,154 62	10,639 96	10,944 83
Distribution System, Overhead	4,945 46	17,078 32	21,653 21	30,608 45
" " Underground	.....	.....	.....	.....
Line Transformers	349 41	14,002 76	4,142 52	4,491 51
Meters	2,814 80	15,990 97	5,071 02	6,467 62
Street Light Equipment, Regular	29,538 36	d	2,112 05	2,114 05
" " Ornamental	.....	d	.....	.....
Miscel. Equip. and Construction Exp.	8,084 38	15,403 42	210 04	210 04
Steam or Hydraulic Plant	.....	.....	.....	15,000 00
Old Plant	32,851 14	39,753 34	50,424 72	19,275 66
Total Plant	99,442 74	137,221 09	94,889 78	96,738 42
Bank and Cash Balance	50 00	590 60	1,797 92	.....
Inventories	24,027 57	.....	98 25	41 32
Accounts Receivable	.....	7,717 87	.....	.....
Sinking Fund	.....	.....	1,946 17	4,353 17
Other Assets	3,728 50	.....	210 45	.....
Total Assets	127,248 81	145,529 56	98,942 57	101,132 91
LIABILITIES AND RESERVES				
Liabilities				
Debenture Balance	57,304 04	93,156 89	64,919 92	62,588 88
Accounts Payable	65,835 40	43,362 27	4,996 40	.....
Bank Overdraft	1,455 13	.....	.....	160 70
Other Liabilities	649 13	266 78	.....	4,196 87
Total Liabilities	125,243 70	136,785 94	69,916 32	66,946 45
Reserves				
Debentures Paid	954 96	3,102 11	27,080 08	29,411 12
Sinking Fund Reserve	.....	.....	1,946 17	4,353 17
Depreciation Reserve	.....	.....	.....	.....
Surplus	1,050 15	5,641 51	.....	422 17
Total Liabilities and Reserves	127,248 81	145,529 56	98,942 57	101,132 91
Percentage of Net Debt to Total Assets	98.4	94.0	73.7	66.3%

"A"—Continued

of Hydro Municipalities as at December 31st, 1914 and 1915

Simcoe	Brampton		Penetanguishene		Wallaceburg	St. Mary's	
4,160	4,160		4,107		4,107	3,960	
1915	1914	1915	1914	1915	1915	1914	1915
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1,486 55	3,808 08	3,808 08	2,151 00	2,151 00	1,753 84	13,674 27	13,674 27
3,668 01	5,183 67	5,200 25	3,507 71	3,507 71	.....	12,914 54	13,002 74
17,194 16	31,669 90	31,951 88	23,287 26	24,333 58	10,401 94	18,883 72	22,025 40
.....	.....	.....	.....	.....	.....	.....	.....
1,786 07	9,323 69	9,141 24	3,524 17	3,846 07	1,799 07	9,918 40	10,695 83
1,117 47	8,580 90	9,403 89	5,026 26	5,191 76	2,931 10	8,720 68	12,709 33
1,478 85	1,785 82	1,799 02	1,721 40	1,721 95	70 55	2,667 79	5,049 39
1,181 83	.....	.....	.....	.....	.....	.....	.....
3,140 28	2,895 62	2,904 61	278 93	278 93	2,302 41	1,601 75	1,713 53
.....	.....	.....	.....	.....	.....	.....	.....
931 92	15,000 00	15,000 00	2,939 00	2,874 00	26,017 56	.....	.....
31,985 14	78,247 68	79,208 97	42,435 73	43,905 00	45,276 47	68,381 15	78,870 49
4,636 00	1,529 90	5,663 24	.....	.....	.....	494 37	3,430 53
395 45	459 64	129 84	834 46	513 50	784 15	716 75	1,207 66
789 90	.....	.....	2,650 00	3,659 27	1,276 81	1,685 00	1,685 00
.....	.....	.....	.....	.....	.....	1,049 31	1,594 91
.....	.....	.....	.....	.....	.....	8,550 00	.....
37,806 49	80,237 22	85,002 05	45,920 19	48,077 77	47,337 43	80,876 58	86,788 59
35,434 90	64,896 56	63,070 87	28,858 61	28,197 45	44,389 16	44,900 97	42,635 27
281 46	.....	.....	.....	.....	1,229 34	5,810 72	5,980 63
.....	.....	.....	1,836 36	1,712 04	569 54	.....	.....
.....	.....	.....	.....	.....	450 00	.....	.....
35,716 36	64,896 56	63,070 87	30,694 97	29,909 49	46,638 04	50,711 69	48,615 90
.....	4,154 08	5,979 77	2,141 39	2,802 55	610 84	18,346 05	20,611 75
.....	.....	.....	.....	.....	.....	1,049 31	1,594 91
.....	8,200 00	11,200 00	5,445 00	7,445 00	.....	3,340 00	6,940 00
2,090 13	2,986 58	4,751 41	7,638 83	7,920 73	88.55	7,429 53	9,026 03
37,806 49	80,237 22	85,002 05	45,920 19	48,077 77	47,337 43	80,876 58	86,788 59
94.4	80.9	74.2	66.8	62.2	98.5	62.7	56.0

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

Municipality	Tillsonburg		Strathroy	Prescott	
Population	3,050		2,988	2,919	
——	1914	1915	1915	1914	1915
ASSETS	$ c.	$ c.	$ c.	$ c.	$ c.
Lands and Buildings	1,974 27	1,974 27	1,070 00	2,743 35	2,753 04
Sub-Station Equipment	6,818 47	6,818 47	4,175 40	.....	.....
Distribution System, Overhead	17,736 20	18,252 15	15,841 42	22,956 43	23,886 23
" " Underground	.....	.....	.....	.....	.....
Line Transformers	4,041 90	4,041 90	3,211 14	5,028 36	5,028 61
Meters	4,294 27	4,638 91	3,534 75	7,151 98	7,354 45
Street Light Equipment, Regular	1,762 50	1,762 50	1,463 28	1,218 43	1,288 30
" " Ornamental	.....	.....	.....	.....	.....
Miscel. Equip. and Construction Exp.	918 83	918 83	555 15	731 22	1,118 53
Steam or Hydraulic Plant	.....	.....	.....	12,108 35	12,108 35
Old Plant	.....	.....	12,824 13	.....	.....
Total Plant	37,546 44	38,407 03	42,675.27	51,938 12	53,537 51
Bank and Cash Balance	2,383 67	3,804 89	3,496 96	247 58	.....
Inventories	978 42	1,271 84	152 66	.....	.....
Accounts Receivable	3,349 04	3,331 74	.....	603 29	441 53
Sinking Fund	.....	880 26	.....	.....	460 00
Other Assets	.....	.....	.....	.....	.....
Total Assets	44,257 57	47,695 76	46,324 89	52,788 99	54,439 04
LIABILITIES AND RESERVES					
Liabilities					
Debenture Balance	33,907 07	33,605 10	15,486 92	14,008 13	22,548 34
Accounts Payable	600 00	700 00	26,941 40	5,711 54	350 00
Bank Overdraft	.....	.....	.....	.....	115 78
Other Liabilities	.....	.....	.....	280 00	.....
Total Liabilities	34,507 07	34,305 10	42,428 32	19,999 67	23,014 12
Reserves					
Debentures Paid	2,092 93	2,394 90	745 08	771 21	1,431 00
Sinking Fund Reserve	.....	880 26	.....	.....	460 00
Depreciation Reserve	4,436 50	6,311 50	1,500 00	1,950 00	1,950 00
Surplus	3,221 07	3,804 00	1,651 49	30,068 11	27,583 92
Total Liabilities and Reserves	44,257 57	47,695 76	46,324 89	52,788 99	54,439 04
Percentage of Net Debt to Total Assets	78.0	71.9	91.6	37.9	42.3

"A"—Continued

of Hydro Municipalities as at December 31st, 1914 and 1915

Hespeler 2,634		Elmira 2,200		Weston 2,186		Clinton 2,112	
1914	1915	1914	1915	1914	1915	1914	1915
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
3,499 23	3,499 23	.....	.....	3,230 94	3,230 94	.....	.....
8,506 64	8,471 64	.....	.....	4,985 23	4,985 23	4,144 87	7,738 47
6,244 06	6,686 61	8,793 62	9,009 28	11,349 65	11,875 08	10,302 76	10,391 70
.....	.....	.....	.....	.....	.....	.....	.....
3,971 30	4,880 87	2,112 02	2,317 42	4,334 55	4,871 82	1,937 64	2,139 79
4,111 93	4,175 69	2,214 61	2,550 46	3,221 68	3,848 68	2,649 27	2,683 27
753 50	815 07	570 67	578 29	1,893 15	1,914 16	206 41	206 41
.....	.....	.....	.....	.....	.....	.....	.....
93,08	93 08	2,076 74	2,076 74	2,959 67	2,831 67	3,293 18	3,310 45
.....	.....	.....	.....	.....	.....	.....	.....
3,000 00	3,000 00	2,296 27	2,296 27	.....	.....	13,491 00	13,456 00
30,179 74	31,622 19	18,063 93	18,828 46	31,974 87	33,557 58	36,025 13	39,926 09
1,113 29	2,522 35	3,542 98	5,000 25	.....	.....	.....	392 93
.....	.....	131 83	96 03	152 16	117 23	407 00	736 86
549 71	184 33	.....	139 85	595 33	1,344 16	585 46	71 67
.....	.....	.....	.....	.....	2,096 65	792 40	1,584 80
2,594 35	b *1108 06*	.....	.....	805 13	.....	70 37	.....
34,437 09	35,436 93	21,738 74	24,064 59	33,527 49	37,175 62	37,880 36	42,712 35
28,452 44	26,720 76	19,747 02	19,494 04	17,945 62	17,234 76	30,000 00	40,500 00
516 58	141 42	.....	.....	811 38	1,449 79	6,530 26	247 35
.....	.....	.....	.....	172 02	.....	557 70	.....
.....	.....	.....	.....	1,642 76	1,350 57	.....	.....
28,969 02	26,862 18	19,747 02	19,494 04	20,571 78	20,035 12	37,087 96	40,747 35
4,118 07	5,849 75	252 98	505 96	2,022 26	2,733 12	.....	.....
.....	.....	.....	.....	.....	.....	792 40	1,584 80
1,350 00	2,725 00	650 00	1,400 00	4,100 00	5,620 00	.....	380 20
.....	.....	1,088 74	2,664 59	6,833 45	8,787 38	.....	.....
34,437 09	35,436 93	21,738 74	24,064 59	33,527 49	37,175 62	37,880 36	42,712 35
84.0	75.7	90.8	81.0	61.7	53.9	97.9	95.4

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

Municipality	Georgetown		Mimico	
Population	2,002		1,965	
——	1914	1915	1914	1915
ASSETS	$ c.	$ c.	$ c.	$ c.
Lands and Buildings	12 00	12 00	98 30	98 30
Sub-Station Equipment	.....	.....	.....	.....
Distribution System, Overhead	11,080 32	13,646 65	14,785 46	16,958 20
" " Underground	.....	.....	.....	.....
Line Transformers	4,284 36	5,233 91	1,065 00	1,592 62
Meters	2,951 43	3,564 24	3,956 64	4,953 01
Street Light Equipment, Regular	903 94	956 14	655 46	1,022 20
" " Ornamental	.....	.....	.....	.....
Miscel. Equip. and Construction Exp.	939 53	1,184 25	1,103 49	1,355 99
Steam or Hydraulic Plant	.....	.....	.....	.....
Old Plant	2,209 80	2,209 80	.....	.....
Total Plant	22,381 38	26,806 99	21,664 35	25,980 32
Bank and Cash Balance	1,750 51	994 45	271 50	459 59
Inventories	478 75	608 73	323 01	133 03
Accounts Receivable	82 50	457 38	161 82	531 59
Sinking Fund	.....	.....	.....	.....
Other Assets	.....	.....	.....	.....
Total Assets	24,693 14	28,867 55	22,420 68	27,104 53
LIABILITIES AND RESERVES				
Liabilities				
Debenture Balance	19,747 02	19,478 86	14,322 69	16,858 35
Accounts Payable	.....	306 80	4,251 38	3,458 89
Bank Overdraft	.....	.....	.....	.....
Other Liabilities	.....	.....	.....	.....
Total Liabilities	19,747 02	19,785 66	18,574 07	20,317 24
Reserves				
Debentures Paid	252 98	512 14	677 31	1,141 65
Sinking Fund Reserve	.....	.....	.....	.....
Depreciation Reserve	1,150 00	2,430 00	1,660 00	2,860 00
Surplus	3,543 14	6,130 75	1,509 30	2,785 64
Total Liabilities and Reserves	24,693 14	28,867 55	22,420 68	27,104 53
Percentage of Net Debt to Total Assets	80.0	68.5	82.8	74.9

"A"—Continued

of Hydro Municipalities as at December 31st, 1914 and 1915

Milton 1,942		Seaforth 1,871		Acton 1,803		Tilbury 1726	Mitchell 1,706	
1914	1915	1914	1915	1914	1915	1915	1914	1915
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
.....	.....	1,194 00	1,203 25	1,500 00	1,500 00	.....	4,550 44	4,550 44
5,550 19	5,550 19	6,031 75	6,031 75	597 62	597 62	.....	9,034 86	9,034 86
9,144 70	10,354 52	14,166 06	14,700 33	4,763 72	4,839 74	5,268 42	6,756 16	7,631 03
.....	.....	.....	.....	.....	.....	.....	.....	.....
1,462 85	1,881 05	2,733 80	3,212 30	1,535 50	1,696 50	1,057 60	883 82	1,113 82
2,901 68	3,126 86	3,351 87	3,642 67	1,893 40	2,109 15	1,563 05	2,193 62	2,564 87
935 43	935 43	797 34	797 34	892 61	896 21	176 35	823 16	978 00
.....	.....	.....	.....	.....	.....	.....	.....	.....
2,476 90	2,486 23	355 98	355.98	777 99	777 99	893 10	.....	.....
.....	.....	.....	.....	.....	.....	.....	1,500 00	1,500 00
4,712 98	4,344 48	.....	.....	3,550 00	3,510 85	4,244 20	.....	.....
27,184 73	28,678 76	28,630 80	29,943 62	15,510 84	15,928 06	13,202 72	25,742 06	27,373 02
1,927 78	1,171 63	962 98	628 68	457 02	2,200 50	218 47	324 77	1,354 31
813 65	1,882 83	1,453 45	2,686 32	75 00	276 03	129 87	531 39	800 00
4,007 26	2,737 21	46 34	130 57	130 00	.....	2,065 75	1,560 00	337 97
.....	.....	1,391 45	1,892 86	3,954 00	4,156 00	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
33,933 42	34,470 43	32,485 02	35,282 05	20,126 86	22,560 59	15,616 81	28,158 22	29,865 30
22,510 00	21,274 54	25,000 00	25,000 00	14,242 94	13,973 03	9,873 52	10,094 81	8,816 25
.....	.....	.....	.....	.....	322 00	5,350 46	359 21	993 33
.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
22,510 00	21,274 54	25,000 00	25,000 00	14,242 94	14,295 03	15,223 98	10,454 02	9,809 58
2,202 98	3,438 44	.....	.....	257 06	526 97	126 48	4,756 97	6,036 53
.....	.....	1,391 45	1,892 86	3,954 00	4,156 00	.....	.....	.....
2,150 00	3,240 00	2,700 00	4,150 00	1,000 00	1,500 00	.....	3,377 21	4,377 21
7,070 44	6,517 45	3,393 57	4,239 19	672 86	2,082 59	266 35	9,570 02	9,641 98
33,933 42	34,470 43	32,485 02	35,282 05	20,126 86	22,560 59	15,616 81	28,158 22	29,865 30
66.0	61.7	77.0	70.8	70.7	63.4	97.6	37.1	32.8

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

Municipality	New Hamburg		Fergus		Dresden
Population	1,612		1,605		1,444
——	1914	1915	1914	1915	1915
ASSETS	$ c.	$ c.	$ c.	$ c.	$ c.
Lands and Buildings	2,257 59	2,257 59	.....	.....	.....
Sub-Station Equipment	1,083 10	1,083 10	.....	.....	523 00
Distribution System, Overhead	8,039 43	8,114 35	7,469 45	8,144 42	5,999 51
" " Underground	.....	.....	.....	.....	.....
Line Transformers	2,664 75	2,664 75	486 65	2,074 38	1,418 21
Meters	2,830 27	3,127 07	1,742 13	2,109 83	2,605 72
Street Light Equipment, Regular	1,077 93	1,149 43	809 10	826 27	715 38
" " Ornamental	.....	.....	.....	.....	.....
Miscel. Equip. and Construction Exp.	958 48	958 48	400 71	543 57	398 43
Steam or Hydraulic Plant	.....	.....	.....	.....	.....
Old Plant	5,324 56	5,242 56	2,863 00	2,546 59	6,026 59
Total Plant	24,236 11	24,597 33	13,771 04	16,245 06	17,686 84
Bank and Cash Balance	.....	202 24	131 94	.....	644 67
Inventories	4,300 42	4,511 38	1,734 01	2,750 83	542 22
Accounts Receivable	1,140 54	1,083 13	.....	.....	.....
Sinking Fund	.....	.....	.....	.....	.....
Other Assets	.....	.....	545 21	.....	.....
Total Assets	29,677 07	30,394 08	16,182 20	18,995 89	18,873 73
LIABILITIES AND RESERVES					
Liabilities					
Debenture Balance	16,838 31	16,509 00	16,000 00	15,779 11	15,950 94
Accounts Payable	288 00	1,217 86	.....	.....	2,503 99
Bank Overdraft	2,228 53	.....	.....	1,483 32	.....
Other Liabilities	.....	.....	182 20	.....	.....
Total Liabilities	19,354 84	17,726 86	16,182 20	17,262 43	18,454 93
Reserves					
Debentures Paid	890 77	1,220 08	.....	220 89	287 31
Sinking Fund Reserve	.....	.....	.....	.....	.....
Depreciation Reserve	2,945 00	3,845 00	.....	650 00	.....
Surplus	6,486 46	7,602 14	.....	862 57	131 49
Total Liabilities and Reserves	29,677 07	30,394 08	16,182 20	18,995 89	18,873 73
Percentage of Net Debt to Total Assets	65.2	58.1	100	90.8	98.0

"A"—Continued

of Hydro Municipalities as at December 31st, 1914 and 1915

Pt. Dalhousie 1,318		Norwich 1,301		Elora 1,216		Caledonia 1,202		Victoria Harbor 1,200
1914	1915	1914	1915	1914	1915	1914	1915	1915
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
.....	.....	829 17	910 40	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
3,023 09	3,273 52	6,373 65	6,504 04	6,138 53	7,189 83	4,283 96	4,651 20	134 49
.....	.....	.....	.....	.....	.....	.....	.....	.....
1,732 75	1,792 00	828 37	1,149 41	803 21	1,250 05	318 00	391 65	.....
185 71	2,124 13	2,004 51	2,293 66	1,068 18	1,391 03	673 22	761 27	265 85
220 95	268 67	546 06	546 06	438 33	438 33	282 27	349 62	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
386 66	1,081 66	680 54	963 17	839 00	908 18	473 20	473 20	21 34
.....	.....	.....	.....	.....	.....	.....	.....	.....
6,325 50	6,325 50	3,509 82	3,509 82	2,100 00	1,482 85	.....	.....	4,800 00
11,874 66	14,865 48	14,772 12	15,876 56	11,387 25	12,661 27	6,030 65	6,626 94	5,221 68
703 77	.....	471 76	2,261 99	10 34	30 21	11 61	217 29	1,680 05
33 10	385 50	993 00	2,038 83	342 12	576 62	.....	.....	.....
.....	712 08	1,706 42	672 30	.....	.....	189 00	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	455 90	.....	.....	.....	.....	.....
12,611 53	15,963 06	17,946 30	21,305 58	11,739 71	13,268 10	6,231 26	6,844 23	6,901 73
.....	12,500 00	13,198 79	12,963 89	9,790 48	9,570 48	4,624 00	4,539 72	6,500 00
.....	1,953 12	518 09	901 19	1,709 52	2,639 52	259 17	50 05	211 83
11,646 74	42 20	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	45 97
11,646 74	14,495 32	13,716 88	13,865 08	11,500 00	12,210 00	4,883 17	4,589 77	6,757 80
.....	.....	557 21	792 11	209 52	429 52	.....	84 28	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
864 02	1,279 02	1,030 00	2,225 00	.....	460 00	510 00	810 00	.....
100 77	188 72	2,642 21	4,423 39	30 19	168 58	838 09	1,360 18	143 93
12,611 53	15,963 06	17,946 30	21,305 58	11,739 71	13,268 10	6,231 26	6,844 23	6,901 73
92.5	90.8	76.4	65.1	97.1	92.0	78.4	67.6	97.9

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

Municipality	New Toronto		Waterf'rd	Hagersville	
Population	1,153		1,134	1,091	
	1914	1915	1915	1914	1915
ASSETS:	$ c.	$ c.	$ c.	$ c.	$ c.
Lands and Buildings					
Sub-Station Equipment					
Distribution System, Overhead	4,623 04	6,541 85	783 65	6,240 31	6,493 43
" " Underground					
Line Transformers	663 19	1,474 23		558 77	1,078 27
Meters	1,080 60	1,502 25	73 80	1,157 05	1,865 83
Street Light Equipment, Regular	271 18	271 18		415 55	415 55
" " Ornamental					
Miscel. Equip. and Construction Exp.	1,125 40	1,200 37	156 11	96 19	101 80
Steam or Hydraulic Plant					
Old Plant			6,789 32		
Total Plant	7,763 41	10,989 88	7,802 88	8,467 87	9,954 88
Bank and Cash Balance			81 60	131 65	1,066 60
Inventories	37 80	124 77		486 55	165 71
Accounts Receivable	600 00	223 08	205 79		
Sinking Fund					
Other Assets					
Total Assets	8,401 21	11,337 73	8,090 27	9,086 07	11,187 19
LIABILITIES AND RESERVES					
Liabilities					
Debenture Balance	7,879 58	7,753 14	6,803 44	7,909 69	7,754 37
Accounts Payable		1,371 76	217 90		
Bank Overdraft	65 98	119 59			
Other Liabilities			40 58		
Total Liabilities	7,945 56	9,244 49	7,061 92	7,909 69	7,754 37
Reserves					
Debentures Paid	120 42	246 86	942 09	90 31	245 63
Sinking Fund Reserve					
Depreciation Reserve		750 00		425 00	925 00
Surplus	135 23	1,096 38	86 26	661 07	2,262 19
Total Liabilities and Reserves	8,401 21	11,337 73	8,090 27	9,086 07	11,187 19
Percentage of Net Debt to Total Assets	94.6	81.5	83.5	87.0	69.0

"A"—Continued

of Hydro Municipalities as at December 31st, 1914 and 1915

Winchester 1,044		Beaverton 965		Stayner 950		Port Credit 944	
1914	1915	1914	1915	1914	1915	1914	1915
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
200 00	224 15	250 00	250 00	.....	.....	675 00	675 00
.....	.....	.....	.....	.....	200 00	.....	.....
7,001 51	7,225 62	4,513 16	5,912 64	1,301 96	3,467 35	7,332 36	7,613 47
.....	.....	.....	.....	.....	.....	.....	.....
481 86	481 86	193 24	470 75	300 00	959 03	747 98	722 48
997 19	1,014 44	70 95	1,720 22	635 78	875 08	1,652 18	1,826 78
564 98	564 98	399 83	453 44	86 31	386 31	294 99	294 99
.....	.....	.....	.....	.....	.....	.....	.....
521 22	264 14	418 32	1,141 32	128 40	128 40	614 26	614 26
.....	.....	.....	.....	.....	.....	.....	.....
1,100 00	1,100 00	4,000 00	3,787 92	7,657 15	4,490 15	.....	.....
10,866 76	10,875 19	9,845 50	13,736 29	10,109 60	10,506 32	11,316 77	11,746 98
.....	1,621 20	683 07	865 12	.....	641 00	.....	986 91
583 44	881 74	264 76	403 42	34 38	66 44	.....	.....
.....	.....	.....	.....	871 94	.....	180 00	180 00
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	b *864 69*	.....	.....	.....	.....
11,450 20	13,378 13	10,793 33	15,869 52	11,015 92	11,213 76	11,496 77	12,913 89
.....	10,515 30	10,000 00	9,691 45	8,496 00	8,221 10	7,144 09	7,013 39
9,580 89	200 00	793 33	5,869 52	1,005 07	1,072 16	1,300 48	1,495 16
.....	.....	.....	.....	572 29	.....	61 94	.....
.....	.....	.....	.....	.....	.....	.....	.....
9,580 89	10,715 30	10,793 33	15,560 97	10,073 36	9,293 26	8,506 51	8,508 55
.....	134 70	.....	308 55	504 00	778 90	355 91	486 61
.....	.....	.....	.....	.....	.....	.....	.....
500 00	965 00	.....	.....	115 00	415 00	981 00	1,581 00
1,369 31	1,563 13	.....	.....	323 56	726 60	1,653 35	2,337 73
11,450 20	13,378 13	10,793 33	15,869 52	11,015 92	11,213 76	11,496 77	12,913 89
83.7	80.1	100		91.4	82.7	74.0	66.0

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

Municipality	Cannington		Ayr	Dutton
Population	917		910	890
——	1914	1915	1915	1915
ASSETS	$ c.	$ c.	$ c.	$ c.
Lands and Buildings			125 00	
Sub-Station Equipment				
Distribution System, Overhead	4,739 60	6,112 21	2,934 89	5.086 66
" " Underground				
Line Transformers	276 00	930 38	694 05	617 24
Meters	315 69	1,533 22	814 67	1,377 84
Street Light Equipment, Regular	349 38	492 98	360 27	441 01
" " Ornamental				
Miscel. Equip. and Construction Exp.		367 58	785 49	258 88
Steam or Hydraulic Plant				
Old Plant	3,729 37	3,699 37	3,959 68	
Total Plant	9,410 04	13,135 74	9,674 05	7,781 63
Bank and Cash Balance	2,909 90	1,034 58		427 02
Inventories		649 78	115 24	394 74
Accounts Receivable		170 62	91 50	
Sinking Fund				
Other Assets		b 1 158 65		
Total Assets	12,319 94	16,149 37	9,880 79	8,603 39
LIABILITIES AND RESERVES				
Liabilities				
Debenture Balance	12,000 00	11,834 35	9,346 58	8,407 49
Accounts Payable	319 94	4,149 37	133 70	
Bank Overdraft			27 81	
Other Liabilities				
Total Liabilities	12,319 94	15,983 72	9,508 09	8,407 49
Reserves				
Debentures Paid		165 65		
Sinking Fund Reserve				
Depreciation Reserve			250 00	
Surplus			122 70	195 90
Total Liabilities and Reserves	12,319 94	16,149 37	9,880 79	8,603 39
Percentage of Net Debt to Total Assets	100		96.2	97.7

"A"—Continued

of Hydro Municipalities as at December 31st, 1914 and 1915

Chesterville 885		Port Stanley 876		Waterdown 817		Elmvale 775	
1914	1915	1914	1915	1914	1915	1914	1915
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
.....	.....	1,505 38	1,505 38	.....	.....	106 25	106 25
.....	.....	.....	.....	.....	.....	.....	.....
4,098 65	5,058 44	8,861 69	9,322 94	6,241 13	7,024 71	5,373 48	5,687 64
.....	.....	.....	.....	.....	.....	.....	.....
174 78	401 48	1,256 56	1,495 56	1,645 24	1,663 58	432 87	755 41
236 80	977 19	1,736 26	1,960 26	1,176 47	1,319 36	825 05	1,003 45
160 34	306 46	570 60	570 60	156 65	156 65	298 93	317 98
.....	.....	.....	.....	.....	.....	.....	.....
479 12	552 68	5,517 16	5,517 16	88 34	100 34	455 93	455 93
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	1,000 00	1,000 00	.....	.....	.....	.....
5,149 69	7,296 25	20,447 65	21,371 90	9,307 83	10,264 64	7,492 51	8,326 66
696 36	383 85	4,029 25	4,495 30	259 05	1,273 49	.....	.....
.....	578 75	.....	.....	104 26	4 44	.....	251 86
50 00	.....	.....	.....	.....	.....	224 42	95 11
.....	.....	.....	.....	.....	.....	.....	.....
.....	b 54 47	.....	.....	.....	.....	.....	.....
5,896 05	8,313 32	24,476 90	25,867 20	9,671 14	11,542 57	7,716 93	8,673 63
4,931 00	4,858 20	17,828 48	17,487 16	6,096 89	7,430 16	6,784 01	6,667 85
602 44	2,807 38	40 00	20 00	1,200 41	.....	.....	169 22
.....	.....	.....	.....	.....	.....	287 81	192 46
17 47	258 44	.....	.....	.....	.....	.....	.....
5,550 91	7,924 02	17,868 48	17,507 16	7,297 30	7,430 16	7,071 82	7,029 53
69 00	141 80	1,121 52	1,462 84	403 11	569 84	215 99	332 15
.....	.....	.....	.....	.....	.....	.....	.....
247 50	247 50	2,338 08	3,078 08	785 00	1,785 00	350 00	735 00
28 64	.....	3,148 82	3,819 12	1,185 73	1,757 57	79 12	576 95
5,896 05	8,313 32	24,476 90	25,867 20	9,671 14	11,542 57	7,716 93	8,673 63
94.1	95.4	72.1	67.7	74.8	64.4	91.6	81.0

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

Municipality	Lucan	Baden		Thamesville	Bothwell
Population	720	710		708	707
	1915	1914	1915	1915	1915
ASSETS	$ c.	$ c.	$ c.	$ c.	$ c.
Lands and Buildings		660 64	660 64		
Sub-Station Equipment					
Dist. System, Overhead	5,327 10	3,575 21	3,869 75	3,418 12	3,153 38
" " Underground					
Line Transformers	811 56	640 67	1,035 14	879 01	432 00
Meters	1,191 31	670 95	786 78	800 96	879 40
Street Light Equip., Regular	372 54	370 02	370 02	305 70	316 75
" " " Ornamental					
Miscel. Equip. and Con. Exp.	369 01			392 35	297 15
Steam or Hydraulic Plant					
Old Plant	3,204 10			4,893 30	534 19
Total Plant	11,275 62	5,917 49	6,722 33	10,689 44	5,612 87
Bank and Cash Balance	414 07	1,265 29	1,984 76		266 82
Inventories	799 05	6 71			
Accounts Receivable				917 65	155 00
Sinking Fund					
Other Assets	b 21 08				
Total Assets	12,509 82	7,189 49	8,707 09	11,607 09	6,034 69
LIABILITIES AND RESERVES					
Liabilities					
Debenture Balance	11,213 62	4,759 59	4,672 31	4,937 80	534 19
Accounts Payable	1,296 20	350 00	740 69	1,463 42	508 79
Bank Overdraft				4,985 59	4,832 16
Other Liabilities					
Total Liabilities	12,509 82	5,109 59	5,413 00	11,386 81	5,875 14
Reserves					
Debentures Paid		240 41	327 69		
Sinking Fund Reserve					
Depreciation Reserve		557 00	857 00		
Surplus		1,282 49	2,109 40	220 28	159 55
Total Liabilities and Reserves	12,509 82	7,189 49	8,707 09	11,607 09	6,034 69
Percentage of Net Debt to Total Assets	100.0	71.1	62.2	96.0	97.0

"A"—Continued

of Hydro Municipalities as at December 31st, 1914 and 1915

Burford	Bolton	Woodbridge	Rockwood		Coldwater		Wauba'shene
700	674	651	650		609		600
1915	1915	1915	1914	1915	1914	1915	1915
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
202 00	.....	.....	79 00	79 00	275 00	275 00	.....
.....	.....	.....	.....	.....	.....	.....	.....
3,119 31	6,442 50	5,278 03	3,743 79	3,866 93	5,278 18	5,278 18	2,637 80
.....	.....	.....	.....	.....	.....	.....	.....
868 50	998 38	1,667 57	853 43	972 93	1,010 77	1,010 77	239 66
401 42	875 60	787 58	648 08	781 60	1,060 96	1,114 04	532 86
147 40	561 14	314 81	254 58	254 58	354 20	354 20	142 22
.....	.....	.....	.....	.....	.....	.....	.....
654 70	681 75	471 26	277 01	277 01	132 53	132 53	257 66
.....	.....	.....	.....	.....	.....	.....	.....
.....	2,236 60	.....	.....	.....	.....	.....	.....
5,393 33	11,795 97	8,519 25	5,855 89	6,232 05	8,111 64	8,164 72	3,810 20
.....	167 06	752 97	.....	.....	.....	117 78	365 41
.....	248 90	15 93	83 31	80 56	1,195 69	724 86	62 23
.....	73 75	118 91	.....	.....	268 72	.....	99 64
.....	.....	.....	.....	.....	.....	354 25	.....
b 46 63	.....	.....	.....	.....	.....	.....	.....
5,439 96	12,285 68	9,407 06	5,939 20	6,312 61	9,576 05	9,361 61	4,337 48
4,848 79	9,357 01	8,499 97	1,627 97	1,427 82	6,903 36	6,801 40	.....
280 46	2,694 24	.....	.....	.....	81 66	90 00	4,164 57
104 60	.....	.....	2,413 87	2,118 28	653 84	.....	.....
54 90	.....	.....	.....	.....	.....	.....	.....
5,288 75	12,051 25	8,499 97	4,041 84	3,546 10	7,638 86	6,891 40	4,164 57
151 21	142 99	.....	372 03	572 18	96 64	198 60	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	425 00	275 00	575 00	755 00	1,135 00	.....
.....	91 44	482 09	1,250 33	1,618 33	1,085 55	1,136 61	172 91
5,439 96	12,285 68	9,407 06	5,939 20	6,312 61	9,576 05	9,361 61	4,337 48
97.4	98.0	89.0	68	56.2	79.8	73.6	96.0

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

Municipality Population	St. George 600	Princeton 600	Creemore 590		Sunderland 570	
——	1915	1915	1914	1915	1914	1915
ASSETS	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Lands and Buildings	.....	.....	.....	.....	.....	.....
Sub-Station Equipment	.....	.....	.....	.....	.....	.....
Distribution System, Overhead	2,759 81	1,671 68	3,459 73	4,150 11	2,281 98	2,731 81
" " Underground	.....	.....	.....	.....	.....	.....
Line Transformers	851 31	297 70	315 48	681 39	470 00	470 00
Meters	739 43	342 96	570 00	738 56	.....	639 40
Street Light Equipment, Regular	218 11	116 30	261 17	272 07	153 02	190 82
" " Ornamental	.....	.....	.....	.....	.....	.....
Miscel. Equip. and Construction Exp.	374 18	27 85	111 89	185 41	21 74	147 22
Steam or Hydraulic Plant	.....	.....	.....	.....	.....	.....
Old Plant	.....	.....	.....	2,651 15	2,030 00	2,030 00
Total Plant	4,942 84	2,456 49	4,718 27	8,678 69	4,956 74	6,209 25
Bank and Cash Balance	593 44	1,163 08	316 52	326 56	843 26	.....
Inventories	87 69	.....	131 10	214 94	.....	148 27
Accounts Receivable	814 32	.....	.....	73 31	.....	.....
Sinking Fund	.....	.....	.....	.....	.....	.....
Other Assets	.....	.....	.....	.....	.....	b *607 85*
Total Assets	6,438 29	3,619 57	5,165 89	9,293 50	5,800 00	6,965 37
LIABILITIES AND RESERVES						
Liabilities						
Debenture Balance	5,917 17	3,496 57	4,602 75	6,323 31	5,800 00	5,635 45
Accounts Payable	229 55	.....	.....	2,655 76	.....	320 00
Bank Overdraft	.....	.....	348 85	.....	.....	845 37
Other Liabilities	.....	.....	.....	.....	.....	.....
Total Liabilities	6,146 72	3,496 57	4,951 60	8,979 07	5,800 00	6,800 82
Reserves						
Debentures Paid	82 83	53 43	.....	176 69	.....	164 55
Sinking Fund Reserve	.....	.....	.....	.....	.....	.....
Depreciation Reserve	.....	.....	.....	.....	.....	.....
Surplus	208 74	69 57	214 29	137 74	.....	.....
Total Liabilities and Reserves	6,438 29	3,619 57	5,165 89	9,293 50	5,800 00	6,965 37
Percentage of Net Debt to Total Assets	95.6	96.5	95.9	91.5	100	100

"A"—Continued

of Hydro Municipalities as at December, 31st, 1914 and 1915

Platts-ville 550	Beachville 501		Comber k	Brechin k	Drumbo k	Dela-ware k	Dor-chester k	Embro k	Lynden k
1915	1914	1915	1915	1915	1915	1915	1915	1915	1915
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
.....	161 03	161 03	.....	.....	.....	.....	.....	.....	100 00
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2,478 44	6,314 43	6,376 73	3,328 22	1,330 29	60 58	2,020 90	2,531 45	5,298 84	2,297 50
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
662 94	604 85	810 45	420 25	366 43	.....	216 75	694 32	480 79	336 18
862 36	600 43	807 66	487 13	315 62	18 60	316 06	641 79	811 24	344 06
133 65	237 03	237 03	199 55	69 89	.....	89 76	183 13	209 29	137 90
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
504 42	540 36	540 36	929 11	215 77	.....	227 81	267 11	249 84	144 37
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	3,675 29	.....	.....	426 25	.....
4,641 81	8,458 13	8,933 26	5,364 26	2,298 00	3,754 47	2,871 28	4,318 00	7,476 25	3,360 01
367 22	275 58	764 67	24 73	296 45	819 43	1,235 11	443 20	223 80	1,934 64
12 96	117 45	250 00	.....	.....	6 35	.....	.....	.....	.....
372 60	1,029 60	580 00	.....	9 75	.....	.....	.....	.....	67 50
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	1,080 22	.....	.....	.....	.....	.....
5,394 59	9,880 76	10,527 93	5,388 99	3,684 42	4,580 25	4,106 39	4,761 30	7,700 05	5,362 15
5,158 18	5,213 71	5,013 93	4,363 91	1,750 00	4,432 27	4,000 00	4,300 00	.....	4,495 00
19 14	477 97	77 97	831 71	1,934 42	.....	.....	.....	.....	766 66
.....	.....	.....	.....	.....	.....	.....	.....	7,399 78	.....
.....	.....	.....	48 47	.....	.....	24 00	.....	4 95	.....
5,177 32	5,691 68	5,091 70	5,244 09	3,684 42	4,432 27	4,024 00	4,300 00	7,404 73	5,261 66
78 82	146 29	346 07	136 09	.....	67 73	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
.....	925 00	1,345 00	.....	.....	.....	.....	200 00	250 00	.....
138 45	3,117 79	3,744 96	8 81	.....	80 25	82 39	261 30	45 32	100 49
5,394 59	9,880 76	10,527 93	5,388 99	3,684 42	4,580 25	4,106 39	4,761 30	7,700 05	5,362 15
96.1	57.7	49.1	97.6	100	96.8	98.0	89.5	96.0	98.1

STATEMENT

Comparative Condensed Balance Sheets of Electric Departments

Municipality	Lambeth	Mt. Brydges	Pt. McNicoll	Thamesford	
Population	k	k	k	k	
——	1915	1915	1915	1914	1915
ASSETS	$ c.	$ c.	$ c.	$ c.	$ c.
Lands and Buildings	.....	.....	202 60	.....	.....
Sub-Station Equipment	.....	.....	.....	.....	.....
Distribution System, Overhead	2,503 51	2,646 79	3,156 54	2,812 54	2,955 44
" " Underground	.....	.....	.....	.....	.....
Line Transformers	621 01	609 50	250 35	937 05	937 05
Meters	639 78	668 71	393 61	833 21	918 91
Street Light Equipment, Regular	134 37	120 09	103 40	155 62	176 85
" " Ornamental	.....	.....	.....	.....	.....
Miscel. Equip. and Construction Exp.	312 68	143 82	396 44	257 89	260 05
Steam or Hydraulic Plant	.....	.....	.....	.....	.....
Old Plant	.....	.....	.....	.....	.....
Total Plant	4,211 35	4,188 91	4,502 94	4,996 31	5,248 30
Bank and Cash Balance	1,184 06	1 19	127 27	334 68	246 10
Inventories	.....	20 05	59 86	4 25	.....
Accounts Receivable	102 03	171 09	129 12	.....	.....
Sinking Fund	.....	.....	.....	.....	.....
Other Assets	b *318 54*	b *129 13*	.....	.....	.....
Total Assets	5,715 98	4,510 37	4,819 19	5,335 24	5,494 40
LIABILITIES AND RESERVES					
Liabilities					
Debenture Balance	.....	4,161 73	4,769 07	3,023 49	2,975 73
Accounts Payable	5,715 98	290 37	.....	1,681 81	1,281 81
Bank Overdraft	.....	.....	.....	.....	.....
Other Liabilities	.....	.....	.....	.....	7 62
Total Liabilities	5,715 98	4,452 10	4,769 07	4,705 30	4,265 16
Reserves					
Debentures Paid	.....	58 27	.....	34 51	82 27
Sinking Fund Reserve	.....	.....	.....	.....	.....
Depreciation Reserve	.....	.....	.....	250 00	500 00
Surplus	.....	.....	50 12	345 43	646 97
Total Liabilities and Reserves	5,715 98	4,510 37	4,819 19	5,335 24	5,494 40
Percentage of Net Debt to Total Assets	100.0	98.5	99.0	88.0	77.6

"a" Approximate figures only. Accounts not yet fully audited.
"b" Operating losses shown in italics.
"d" All street light equipment paid for by debentures carried in the general account, and the fixed charges raised by tax levy.

"A"—Concluded

of Hydro Municipalities as at December 31st, 1914 and 1915

Woodville k		Williamsburg k	Thorndale k		Toronto Township	
1914	1915	1915	1914	1915	1914	1915
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
966 94	1,397 49	1,478 83	1,738 15	1,863 71	778 22	1,555 50
.....	.....	.....	.....	.....	.....	.....
27 00	550 50	297 89	381 71	381 71	.....	214 91
.....	543 43	427 57	466 53	466 53	.....	355 15
46 72	91 57	66 16	59 40	59 40	.....	.....
.....	.....	.....	.....	.....	.....	.....
31 45	88 96	4 00	148 95	273 95	.....	.....
.....	.....	.....	.....	.....	.....	.....
2,250 00	2,250 00	.....	.....	.....	.....	.....
3,322 11	4,921 95	2,274 45	2,794 74	3,045 30	778 22	2,125 66
677 89	.....	636 27	13 50	61 50	905 45	1,910 90
.....	648 75	168 91	45 21	13 76	.....	.....
.....	.....	.....	.....	294 00	2,339 06	914 56
.....	.....	.....	.....	.....	.....	.....
.....	b 1,647 66	.....	.....	.....	.....	.....
4,000 00	7,218 36	3,079 63	2,853 45	3,414 56	4,022 73	4,951 02
4,000 00	3,944 36	2,666 83	2,432 24	2,500 00	.....	.....
.....	3,175 45	52 39	100 00	222 30	974 44	1,314 54
.....	42 91	220 67	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
4,000 00	7,162 72	2,939 89	2,532 24	2,722 30	974 44	1,314 54
.....	55 64	83 17	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	130 00	265 00	.....	1,800 00
.....	.....	56 57	191 21	427 26	3,048 29	1,836 48
4,000 00	7,218 36	3,079 63	2,853 45	3,414 56	4,022 73	4,951 02
100		95.5	88.7	79.8	.....	26.6

"e" Exhibition construction.
"f" Work orders in progress.
"h" Sandwich construction.
"i" Discount on debentures.
"k" Population, under 500.

STATE

Report Showing Operation of Municipalities

Municipality	Months Covered by Report	Population	Plant Cost	Debenture Debt and Overdraft	Operation and Maintenance	Fixed Charges	Total Operation
			$ c.	$ c.	$ c.	$ c.	$ c.
Toronto	12	470,144	6,884,708 93	6,677,519 51	956,481 51	362,337 99	1,318,821 50
Ottawa	12	101,785	887,204 23	550,940 57	129,523 19	40,365 58	169,888 77
Hamilton	12	101,344	1,020,067 41	981,757 50	182,762 17	60,946 11	243,708 28
London	12	56,358	723,930 24	562,670 58	186,573 48	38,493 89	225,067 37
Brantford	12	26,389	257,995 72	228,723 08	36,929 82	14,686 37	51,616 19
Windsor	12	22,993	389,024 86	399,090 64	53,451 15	13,038 53	66,489 68
Peterborough	12	20,653	173,320 55	159,102 92	73,450 85	13,372 97	86,823 82
Berlin	12	19,056	346,168 38	197,325 63	67,382 34	18,436 93	85,819 27
Port Arthur	12	18,324	670,302 59	510,313 86	82,066 52	46,493 09	128,559 61
St. Catharines	12	17,296	198,730 92	187,309 45	31,803 04	9,724 03	41,527 07
Stratford	12	17,006	216,160 04	175,731 33	46,327 30	14,398 80	60,726 10
Guelph	12	16,799	218,065 37	115,482 46	54,274 90	10,273 28	64,548 18
St. Thomas	12	16,794	182,122 40	118,035 07	63,405 98	8,359 74	71,765 72
Chatham	10	12,714	129,781 16	137,533 32	11,712 08	5,463 80	17,175 88
Galt	12	12,060	256,668 37	185,023 77	42,685 89	13,269 15	55,955 04
Woodstock	12	10,265	150,427 74	71,038 39	30,905 45	7,290 95	38,196 40
Welland	12	7,243	95,885 63	102,756 18	34,371 79	8,660 08	43,031 87
Barrie	12	7,088	106,834 33	49,871 34	20,416 88	6,052 29	26,469 17
Midland	12	6,375	78,673 32	39,362 52	12,986 79	3,827 60	16,814 39
Collingwood	12	6,361	60,600 08	35,984 71	17,639 29	3,556 84	21,196 13
Ingersoll	12	5,200	95,705 96	75,366 00	21,394 77	5,046 35	26,441 12
Preston	12	4,942	105,009 59	78,793 96	25,475 13	7,212 87	32,688 00
Waterloo	12	4,908	95,334 92	62,627 67	22,179 15	4,284 71	26,463 86
Dundas	12	4,687	73,102 66	62,061 13	10,892 22	5,706 69	16,598 91
Goderich	12	4,676	76,565 47	50,158 35	10,978 87	4,447 27	15,426 14
Walkerville	12	4,565	137,221 09	136,785 94	51,382 83	7,956 95	59,339 78
Paris	12	4,383	96,738 42	62,593 28	11,440 13	7,966 15	19,406 28
Simcoe	9	4,160	31,985 14	35,716 36	3,136 16	.....	3,136 16
Brampton	12	4,160	79,208 97	63,070 87	17,523 41	4,799 34	22,322 75
Penetang	12	4,107	43,905 00	29,909 49	12,755 43	1,981 39	14,736 82
Wallaceburg	11	4,107	45,276 47	46,638 04	7,417 58	3,580 84	10,998 42
St. Mary's	12	3,960	78,870 49	47,020 99	11,732 45	4,775 42	16,507 87
Tillsonburg	12	3,050	38,407 03	33,424 84	11,101 82	2,674 75	13,776 57
Strathroy	12	2,988	42,675 27	42,428 32	7,133 56	2,719 74	9,853 30
Prescott	12	2,919	53,537 51	22,554 12	9,672 01	2,233 12	11,905 13
Hespeler	12	2,634	31,622 19	26,852 18	9,294 59	3,144 33	12,438 92
Elmira	12	2,200	18,828 46	19,494 04	4,536 11	1,356 67	5,892 78
Weston	12	2,186	33,557 58	20,035 12	8,401 80	2,352 32	10,754 12
Clinton	12	2,115	39,926 09	39,162 55	6,762 43	2,643 15	9,405 58
Georgetown	12	2,002	26,806 99	19,785 66	10,177 43	1,929 67	12,107 10
Mimico	12	1,965	25,980 32	20,317 24	4,550 85	1,790 57	6,341 42
Milton	12	1,942	28,678 76	21,274 54	8,014 72	2,270 34	10,285 06
Seaforth	12	1,871	29,943 62	23,107 14	11,059 56	1,662 37	12,721 93
Acton	12	1,803	15,928 06	10,139 03	3,386 08	1,124 06	4,510 14
Tilbury	8	1,726	13,202 72	15,223 98	2,255 57	668 57	2,924 14
Mitchell	12	1,706	27,373 02	9,809 58	6,196 05	2,124 46	8,320 51
New Hamburg	12	1,612	24,597 33	17,726 86	4,846 51	1,303 57	6,150 08
Fergus	13	1,605	16,245 06	17,262 43	3,928 25	967 76	4,896 01
Dresden	8	1,444	17,686 84	18,454 93	2,683 97	754 98	3,438 95
Pt. Dalhousie	12	1,318	14,865 48	14,495 32	3,681 09	629 04	4,310 13
Norwich	12	1,301	15,876 56	13,865 08	4,444 29	1,985 15	6,429 44
Elora	12	1,216	12,661 27	12,210 00	2,832 77	846 15	3,678 92
Caledonia	12	1,202	6,626 94	4,589 77	981 62	361 72	1,343 34
Vict. Harbor	3	1,200	5,221 68	6,757 80	220 71	.....	220 71
New Toronto	12	1,153	10,989 88	9,244 49	2,174 21	654 10	2,828 31

MENT "B"

for Period ending December 31st, 1915

Revenue	Surplus	Depreciation	Surplus less Depreciation	Number of Consumers				PerCent. of Consumers to Population	H. P. taken in Dec. 1915
				Domestic	Com'l	Power	Total		
$ c.	$ c.	$ c.	$ c.						
1,589,116 94	270,295 44	.....	270,295 44	29,724	7,227	1,504	38,455	8.2	40,180
203,243 82	33,355 05	33,000 00	355 05	7,338	1,060	140	8,538	8.4	4,209
300,431 83	56,723 55	25,808 87	30,914 68	10,595	1,434	406	12,435	12.4	8,646
285,630 51	60,563 14	32,734 97	27,828 17	7,326	1,046	271	8,643	15.2	6,876
66,296 31	14,680 12	10,000 00	4,680 12	1,615	321	18	1,954	13.4	1,863
71,814 55	5,324 87	.....	5,324 87	2,519	377	43	2,939	12.8	1,374
98,042 12	11,218 30	7,500 00	3,718 30	3,221	602	113	3,936	19.1	2,693
110,380 44	24,561 17	13,500 00	11,061 17	2,032	546	138	2,716	14.1	2,715
162,498 19	33,938 58	.....	33,938 58	2,800	550	50	3,400	18.1	2,340
50,646 36	9,119 29	7,250 00	1,869 29	1,612	192	34	1,838	10.6	2,149
64,065 89	3,339 79	5,250 00	*1,910 21*	1,724	439	104	2,267	13.3	1,367
77,858 17	13,309 99	10,500 00	2,809 99	1,824	474	81	2,379	14.1	2,628
89,904 48	18,138 76	8,735 00	9,403 76	1,903	434	101	2,438	14.5	1,953
16,454 41	*721 47*	.....	*721 47*	949	180	7	1,136	8.9	516
69,721 15	13,766 11	10,000 00	3,766 11	2,038	375	75	2,488	20.1	2,189
51,417 32	13,220 92	6,725 00	6,495 92	1,099	360	62	1,521	12.2	1,046
50,887 23	7,855 36	4,425 00	3,430 36	467	57	23	547	7.6	3,136
30,448 86	3,979 69	3,500 00	479 69	843	252	14	1,109	15.6	511
24,405 77	7,591 39	3,400 00	4,191 39	689	188	39	916	14.4	452
27,025 23	5,829 10	2,600 00	3,229 10	622	233	26	881	13.8	744
31,623 97	5,182 85	3,200 00	1,982 85	497	197	52	746	14.4	811
35,648 51	2,960 51	3,800 00	*839 49*	714	174	30	918	18.6	1,185
31,861 35	5,397 49	4,000 00	1,397 49	524	162	53	739	15.1	721
19,841 82	3,242 91	2,900 00	342 91	613	160	37	810	.....	593
22,309 53	6,883 39	3,750 00	3,133 39	441	168	8	617	13.2	212
64,981 29	5,641 51	.....	5,641 51	1,159	195	72	1,426	.....	1,079
20,038 90	632 62	.....	632 62	477	150	4	631	14.4	448
5,226 29	2,090 13	.....	2,090 13	35	61	8	104	2.5	97
27,087 58	4,764 83	3,000 00	1,764 83	691	174	21	886	21.0	623
17,018 72	2,281 90	2,000 00	281 90	174	102	15	271	6.6	440
11,086 97	88 55	.....	88 55	368	161	2	531	12.9	180
21,704 37	5,196 50	3,600 00	1,596 50	528	151	33	712	18.0	337
16,234 50	2,457 93	1,875 00	582 93	348	161	15	524	17.3	264
13,004 79	3,151 49	1,500 00	1,651 49	233	147	5	385	12.8	152
13,023 21	1,118 08	2,000 00	*881 92*	369	145	11	525	18.0	229
15,675 21	3,236 29	1,750 00	1,486 29	272	90	14	376	14.3	397
8,218 63	2,325 85	750 00	1,575 85	185	85	10	280	12.7	107
14,228 05	3,473 93	1,520 00	1,953 93	441	90	9	540	24.7	239
9,856 15	450 57	380 20	70 37	204	110	6	320	15.2	116
15,974 81	3,867 71	1,280 00	2,587 71	295	97	16	408	20.4	241
9,152 70	2,811 28	1,200 00	1,611 28	609	7	3	619	.....	153
10,822 07	537 01	1,090 00	*552 99*	170	80	7	257	13.2	334
15,017 55	2,295 62	1,450 00	845 62	238	111	11	360	19.3	397
6,419 87	1,909 73	500 00	1,409 73	183	53	5	241	13.4	76
3,190 49	266 35	.....	266 35	123	67	.....	190	10.9	61
9,392 47	1,071 96	1,000 00	71 96	190	95	17	302	17.7	138
8,165 76	2,015 68	900 00	1,115 68	187	70	4	261	16.1	82
6,408 58	1,512 57	650 00	862 57	114	91	7	212	13.2	139
3,570 44	131 49	.....	131 49	185	109	.....	294	20.0	68
4,828 82	518 69	415 00	103 69	250	19	2	262	20.0	107
9,405 62	2,976 18	1,195 00	1,781 18	228	80	5	313	.....	194
4,277 31	598 39	460 00	138 39	89	60	1	150	12.3	57
2,162 42	819 08	300 00	519 08	24	33	1	58	4.8	38
364 64	143 93	.....	143 93	56	34	.....	90	7.5	31
4,339 46	1,511 15	550 00	961 15	153	8	2	162	14.1	137

STATEMENT

Report Showing Operation of Municipalities

Municipality	Months Covered by Report	Population	Plant Cost	Debenture Debt and Overdraft	Operation and Maintenance	Fixed Charges	Total Operation
			$ c.	$ c.	$ c.	$ c.	$ c.
Waterford ...	9	1,134	7,802 88	7,061 92	1,058 98	978 56	2,037 54
Hagersville ..	12	1,091	9,954 88	7,754 37	3,821 37	577 57	4,398 94
Winchester...	12	1,044	10,875 19	10,715 30	3,080 52	795 91	3,876 43
Beaverton ...	14	965	13,736 29	15,560 97	4,237 88	884 64	5,122 52
Stayner	12	950	10,506 32	9,293 26	2,743 51	784 66	3,528 17
Pt. Credit ...	12	944	11,746 98	8,508 55	1,977 27	537 22	2,514 49
Cannington ..	14	917	13,135 74	15,983 72	4,338 25	1,006 80	5,345 05
Ayr	11	910	9,674 05	9,508 09	1,613 63	1,119 49	2,733 12
Dutton	3	890	7,781 63	8,407 49	549 07	144 70	693 77
Chesterville..	12	885	7,296 25	7,924 02	2,306 37	572 55	2,878 92
Pt. Stanley..	12	876	21,371 90	17,507 16	5,783 31	1,232 82	7,016 13
Waterdown ..	12	817	10,264 64	7,430 16	2,231 15	1,243 23	3,474 38
Elmvale	12	775	8,326 66	7,029 53	1,864 24	546 42	2,410 66
Lucan	11	720	11,275 62	12,509 82	1,951 31	412 43	2,363 74
Baden	12	710	6,722 33	5,413 00	4,606 64	373 71	4,980 35
Thamesville .	3	708	10,689 44	11,386 81	697 37	.....	697 37
Bothwell	3	707	5,612 87	5,880 14	481 52	.....	481 52
Burford	6	700	5,393 33	5,288 75	648 61	201 21	849 82
Bolton	10	674	11,795 97	12,051 25	1,659 89	552 32	2,212 21
Woodbridge ..	12	651	8,519 25	8,499 97	1,122 99	239 38	1,362 37
Rockwood	12	650	6,232 05	3,546 10	1,284 51	445 80	1,730 31
Coldwater ...	12	614	8,164 72	6,891 40	1,557 47	481 64	2,039 11
Waubashene .	11	600	3,810 20	4,164 57	752 37	220 84	973 21
St. George ...	4	600	4,942 84	6,146 72	475 45	172 00	647 45
Princeton....	11	600	2,456 49	3,550 00	519 07	263 35	782 42
Creemore	12	582	8,678 69	8,979 07	3,002 48	509 55	3,512 03
Sunderland .	14	570	6,209 25	6,800 82	2,287 36	399 07	2,686 43
Plattsville...	12	550	4,641 81	5,177 32	2,130 63	386 29	2,516 92
Beachville ...	12	503	8,933 26	5,091 70	4,819 25	357 79	5,177 04
Brechin	12	500	2,298 00	3,684 42	2,664 62	96 80	2,761 43
Comber.....	7	Under 500	5,364 26	5,244 09	756 00	172 92	928 92
Drumbo.....	12	" "	3,754 47	4,432 27	846 65	281 33	1,127 98
Delaware	10	" "	2,871 28	4,024 00	289 00	77 13	366 13
Dorchester...	12	" "	4,318 00	4,300 00	642 01	159 47	801 48
Embro	11	" "	7,476 25	7,404 73	930 28	285 25	1,215 53
Lynden.....	2	" "	3,360 01	5,261 66	55 95	.....	55 95
Lambeth	9	" "	4,211 35	5,715 98	1,380 89	156 10	1,536 99
Mt. Brydges .	9	" "	4,188 91	4,452 10	1,165 14	358 60	1,523 74
Pt. McNicoll .	11	" "	4,502 94	4,769 07	823 97	203 14	1,027 11
Thamesford..	12	" "	5,249 30	4,265 16	1,187 38	209 41	1,396 79
Woodville....	14	" "	4,921 95	7,162 72	3,897 07	295 48	4,192 55
Williamsburg.	8	" "	2,274 45	2,939 89	431 14	211 27	642 41
Thorndale ...	12	" "	3,045 30	2,722 30	1,127 21	11 74	1,138 94
Toronto Twp.	12	.....	2,122 66	1,314 54	3,236 18	3,482 49	6,718 67
Total			14,873,347 77	12,982,294 34	2,552,832 50	814,443 67	3,367,276 17

"B"—Continued

for Period ending December 31st, 1915

Revenue	Surplus	Depreciation Charge	Surplus less Depreciation Charge	Number of Consumers				Per Cent of Consumers to Population	H. P. taken in Dec. 1915
				Domestic	Com'l Power		Total		
$ c.	$ c.	$ c.	$ c.						
2,123 80	86 26	.....	86 26	75	40	.....	115	10.0	37
6,400 06	2,001 12	500 00	1,501 12	114	73	3	190	17.4	138
4,535 25	658 82	465 00	193 82	120	50	1	171	16.3	62
4,257 83	*864 69*	.....	*864 69*	131	56	5	192	20.0	56
4,231 21	703 04	300 00	403 04	106	56	2	164	17.4	88
3,798 87	1,284 38	600 00	684 38	141	33	3	177	18.6	62
4,186 40	*1,158 65*	.....	*1,158 65*	135	65	6	206	22.5	47
3,105 82	372 70	250 00	122 70	79	35	1	115	12.6	48
889 67	195 90	.....	195 90	108	43	1	152	17.1	44
2,795 81	*83 11*	.....	*83 11*	85	49	.....	134	15.2	46
8,426 43	1,410 30	740 00	670 30	274	73	9	356	.....	80
5,046 22	1,571 84	1,000 00	571 84	124	30	7	161	.....	90
2,393 49	882 83	385 00	497 83	78	64	2	144	18.6	50
2,342 70	*21 08*	.....	*21 08*	87	39	3	129	17.9	35
6,107 26	1,126 91	300 00	826 91	72	.....	4	76	10.7	177
917 65	220 28	.....	220 28	107	53	.....	160	22.5	45
641 07	159 55	.....	159 55	68	32	.....	100	14.1	29
803 19	*46 63*	.....	*46 63*	36	20	1	57	8.1	56
2,303 65	91 44	.....	91 44	59	42	3	104	17.8	99
2,269 46	907 09	425 00	482 09	42	33	2	77	11.8	44
2,398 31	668 00	300 00	368 00	65	10	3	78	12.0	31
2,470 17	431 06	380 00	51 06	66	37	2	105	17.1	50
1,146 12	172 91	.....	172 91	49	15	1	65	10.9	19
856 19	208 74	.....	208 74	39	14	1	54	9.0	23
851 99	69 57	.....	69 57	30	15	.....	45	7.5	12
3,435 48	*76 55*	.....	*76 55*	78	59	1	138	23.5	44
2,078 58	*607 85*	.....	*607 85*	57	36	.....	93	16.3	23
2,655 37	138 45	.....	138 45	56	20	4	80	14.3	49
6,682 85	1,505 81	420 00	1,085 81	37	12	4	53	10.6	181
1,681 20	*1,080 22*	.....	*1,080 22*	13	14	1	28	.....	50
937 73	8 81	.....	8 81	33	33	.....	66	.....	21
1,208 23	80 25	.....	80 25	40	30	1	71	.....	26
448 52	82 39	.....	82 39	22	10	1	33	.....	8
1,262 78	461 30	200 00	261 30	61	18	2	81	.....	17
1,510 85	295 32	250 00	45 32	65	30	.....	95	.....	24
156 44	100 49	.....	100 49	20	12	.....	32	.....	11
1,318 45	*218 54*	.....	*218 54*	49	9	1	59	.....	45
1,394 61	*129 13*	.....	*129 13*	45	15	1	61	.....	50
1,077 23	50 12	.....	50 12	60	26	.....	86	.....	25
1,948 33	551 54	250 00	301 54	59	26	2	87	.....	33
2,544 89	*1,647 66*	.....	*1,647 66*	35	28	3	66	.....	78
698 98	56 57	.....	56 57	44	9	1	54	.....	17
1,509 99	371 05	135 00	236 05	32	20	1	53	.....	59
8,615 27	1,896 60	1,800 00	96 60	188	.....	.....	188	.....	72
4,069,816 83	702,540 66	240,644 04	461,896 62	95,591	21,419	3,818	120828	.....	.....

Note: Figures in italics indicate operating losses or where the surplus was not sufficient to provide the full depreciation charge.

No depreciation is charged against the first years' operation.

Toronto, Hamilton, and Port Arthur figures not finally audited and subject to minor corrections.

Depreciation in Toronto and Port Arthur included in surplus.

STATE

Comparative Detailed Operating Reports of Electric Departments of Hydro

Municipality	Toronto			Ottawa	
Population	470,144			100,785	
——	1913	1914	1915	1913	1914
	a	a	a		
EARNINGS	$ c.	$ c.	$ c.	$ c.	$ c.
Domestic Light	190,376 89	289,645 45	331 807 18	68,032 27	68,767 48
Commercial Light	233,799 04	305,534 31	291,907 92	53,438 04	51,769 72
Power	347,708 88	483.681 15	575,239 17	26,978 76	31,748 23
Street Light	344,933 79	364.214 17	350,085 97	49,199 57	50,439 29
Miscellaneous	29,891 21	39,651 98	40,076 70	.....	186 11
Total	1,146,709 81	1,482,727 06	1,589,116 94	197,648 64	202,910 83
EXPENSES					
Power Purchased	255,986 26	323,586 97	430,830 00	50,750 00	55,512 39
Sub-Stn. Operation	32,216 66	42,667 33	42,890 24	3,127 63	3,321 20
" " Maint'ce.	11,510 69	23,560 14	17,243 40	107 58	300 81
Dist. System, Operation and Maintenance	50,693 34	59,013 81	59,782 15	13,694 44	17,041 58
Line Transformer M't'c'e.	3,396 98	5,218 22	6,768 29	245 82	1,996 40
Meter	1,648 28	3,072 21	3,856 44	1,537 17	2,390 11
Consumers' Premises–Exp.	36,536 64	52,893 31	37,821 37	10,572 43	6,082 30
Street Light Sys., Operation and Maintenance	45,801 72	48,674 18	63,981 72	15,465 59	15,318 91
Promotion of Business	60,256 03	71,477 64	54,128 73	1,008 50	1,060 00
Billing and Collecting	43,581 71	50,028 39	64,825 42	6,417 69	7.481 30
Gen. Office, Sal. and Exp.	85,957 58	125,972 92	93,332 31	6,941 68	9,604 33
Undistributed Expenses	44,304 25	54,191 98	57,693 45	1,453 47	2,350 91
Int. and Deb. Payments.	274,285 24	325,551 67	362,337 99	30,961 54	38,002 88
Miscellaneous Expenses	.....	b 4,335 80	b 23,330 01	.....	.....
Total Expenses	946,175 38	1,190,244 57	1,318,821 50	142,283 54	160,463 12
Surplus	200,534 43	292,482 49	270,295 44	55,365 10	42,447 71
Loss	.....	.....	.....	.....	.....
Depreciation Charge	115,236 80	147,181 40	.....	24,000 00	32,650 00
Surp. Less Depr. Chg.	85,297 63	145,301 09	.....	31,365 10	9,797 71

Notes—
"a" Approximate figures only. Accounts not finally audited
"b" Patriotic Funds contributions.

MENT "C"

Municipalities for the year ending December 31st, 1913, 1914 and 1915

Ottawa	Hamilton			London		
101,785	101,344			56,358		
1915	1913	1914	1915	1913	1914	1915
		a	a			
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
67,441 19	34,451 95	74,668 38	92,207 60	41,172 64	57,473 08	57,184 75
46,636 99	25,453 99	35,125 57	34,633 16	39,256 07	47,593 44	43,751 37
32,126 50	47,415 58	70,665 43	84,789 71	79,659 78	130,936 35	148,567 23
56,813 66	2,250 89	51,154 36	86,179 51	28,372 20	30,535 83	31,168 87
225 48	9,841 52	2,564 82	2,621 85	3,763 78	3,313 10	4,958 29
203,243 82	119,413 93	234,178 56	300,431 83	192,224 47	269,851 80	285,630 51
53,018 54	47,307 65	78,968 72	103,922 98	72,676 41	97,404 63	122,893 29
3,989 78	3,240 97	5,741 24	8,819 47	5,816 18	9,925 89	8,671 25
588 81	94 01	653 61	51 80	519 81	767 40	135 79
18,193 82	3,168 21	6,504 84	15,441 58	5,342 67	3,850 78	5,220 69
635 82	1,216 21	505 26	253 57	1,674 88	760 87	94 82
3,444 25	16 39	143 97	484 55	138 23	95 60	372 13
2,534 80	2,693 70	2,782 23	4,061 03	1,827 71	2,119 53	2,455 20
19,712 71	1,375 46	13,380 35	10,394 16	5,278 72	8,511 05	6,303 42
3,118 79	4,391 01	3,999 76	3,458 77	5,833 84	5,840 01	6,902 59
8,915 38	6,270 38	10,825 27	13,832 80	6,738 13	9,126 81	10,762 84
11,699 46	3,623 22	12,894 66	17,068 60	14,180 20	16,845 61	15,042 13
3,671 03	1,289 35	3,407 34	4,992 86	6,297 08	6,687 31	4,943 05
40,365 58	30,201 49	46,398 68	60,946 11	29,488 97	35,127 20	38,493 89
.....	.....	.....	.....	.....	.....	b 2,776 28
169,888 77	104,888 05	186,205 93	243,708 28	155,812 83	197,062 69	225,067 37
33,355 05	14,525 88	47,972 63	56,723 55	36,411 64	72,789 11	60,563 14
.....	.....	.....	.....	.....	.....	.....
33,000 00	9,031 35	21,053 66	25,808 87	21,058 82	27,588 39	32,734 97
355 05	5,494 53	26,918 97	30,914 68	15,352 82	45,200 72	27,828 17

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

Municipality	Brantford		Windsor		Peterboro'
Population	26,389		22,993		20,653
——	1914	1915	1914	1915	1914
	e		f		g
EARNINGS	$ c.	$ c.	$ c.	$ c.	$ c.
Domestic Light	7,103 77	13,629 36	3,143 41	23,161 57	8,661 71
Commercial Light	5,392 87	10,746 67	1,107 38	12,009 99	7,749 91
Power	647 69	12,901 29	9 77	3,734 81	7,013 23
Street Light	21,724 64	28,691 05	3,997 85	31,947 11	3,081 59
Miscellaneous	627 57	327 94	.....	961 07	.....
Total	35,496 54	66,296 31	8,258 41	71,814 55	26,506 44
EXPENSES					
Power Purchased	12,999 65	24,661 13	4,330 41	38,849 61	11,920 90
Sub-Stn. Operation	1,069 43	2,111 85	408 67	2,588 72	840 05
" " Maint'ce...	7 84	177 02	.....	236 47	9 08
Dist. System, Operation and Maintenance	376 83	684 06	240 41	629 41	996 31
Line Transformer M't'c'e.	65 26	160 65	.....	48 49	26 35
Meter	10 08	199 00	.....	11 70	6 52
Consumers' Premises–Exp.	40	3 53	.....	222 87	.....
Street Light Sys., Operation and Maintenance..	1,460 00	3,420 03	.....	1,667 97	1,465 01
Promotion of Business ..	1.608 37	1,644 50	.....	1,455 58	.....
Billing and Collecting ...	994 63	1,625 66	441 36	2,416 24	242 70
Gen. Office, Sal. and Exp..	1,069 66	1,443 91	2,170 90	3,821 74	3,777 45
Undistributed Expenses .	215 98	798 48	.....	1,502 25	214 94
Int. and Deb. Payments..	7,444 31	14,686 37	666 66	13,038 53	2,026 21
Miscellaneous Expenses ..	.....	.....	.....	.....	.....
Total Expenses	27,322 44	81,616 19	8,258 41	66,489 68	21,525 52
Surplus	8,174 10	14,680 12	.....	5,324 87	4,980 92
Loss	.....	.....	.....	.....	.....
Depreciation Charge .	6,000 00	10,000 00	.....	.....	.....
Surp. Less Depr. Chg.	2,174 10	4,680 12	.....	.....	4,980 92

Notes—
"e" 9 months' operation
"f" 4 months' operation
"g" 3 months' operation

"C"—Continued

Municipalities for the year ending December 31st, 1913, 1914 and 1915

Peterboro' 20,653	Berlin 19,056			Port Arthur 18,224		
1915	1913	1914	1915	1913	1914	1915
	k					a
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
27,991 24	16,558 82	17,757 08	19,108 60	81,830 66	38,097 65	32,048.37
27,563 41	20,985 35	19,549 45	16,807 15	h	32,933 91	28,662.58
30,185 83	38,368 34	49,173 17	54,732 50	78,193 51	92,804 49	85,060.78
12,294 64	17,373 81	16,544 11	17,017 43	14,709 41	15,458 88	16,726.46
.....	1,268 87	1,726 92	2,714 76	.....	.....	.....
98,035 12	94,555 19	104,750 73	110,380 44	174,733 58	179,294 93	162,498.19
45,240 12	33,359 47	40,275 75	47,644 33	43,664 83	53,412 42	53,007.40
3,269 50	4,892 72	4,282 95	3,727 21	3,652 53	3,268 30	4,176.60
313 85	1,175 64	294 68	465 16	2,140 94	4,323 79	3,132.45
4,632 71	1,575 15	4,411 10	4,193 45	9,013 80	8,003 88	6,713.84
178 43	205 39	20 35	21 76	1 75	454 62	755.08
1,326 47	326 51	564 97	384 57	112 13	670 91	.....
.....	101 97	75 83	127 92	322 64	945 31	239.00
6,000 91	2,803 88	3,884 76	1,699 89	1,543 03	2,146 96	1,764.92
.....	452 28	630 50	169 29	361 85	100 85	416.67
2,125 05	1,901 40	2,259 54	2,569 37	2,630 19	5,324 25	3,271.97
9,542 34	2,532 25	2,615 07	2,686 19	2,613 61	2,557 42	6,777.52
821 47	1,966 04	1,966 38	2,427 57	2,012 67	2,357 63	1,811.07
13,372 97	17,897 45	18,719 43	18,436 93	37,556 73	40,489 67	46,493.09
.....	.....	b 619 00	b 1,265 63	.....	.....	.....
86,823 82	69,190 15	80,620 31	85,819 27	105,626 70	124,056 01	128,559.61
11,211 30	25,365 04	24,130 42	24,561 17	69,106 88	55,238 92	33,938.58
.....	.....	.....	.....	.....	.....	.....
7,500 00	10,980 79	12,884 05	13,500 00	13,647 55	16,469 79	.....
3,711 30	14,384 25	11,246 37	11,061 17	55,459 33	38,769 13	.....

"k" **18 months' operation**
"b" Patriotic Funds contributions.
"a" Approximate figures only.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

Municipality	St.Catharines		Stratford		
Population	17,296		17,006		
——	1914	1915	1913	1914	1915
	g				
EARNINGS					
	$ c.	$ c.	$ c.	$ c.	$ c.
Domestic Light	2,013 49	9,540 70	11,636 59	15,180 91	16,967 58
Commercial Light	412 75	3,810 11	17,033 98	16,336 30	14,766 75
Power	12,742 98	25,193 30	15,123 78	16,519 24	15,415 78
Street Light	944 63	11,579 42	12,120 00	12,120 00	15,466 32
Miscellaneous	44 28	522 83	69 33	1,319 04	1,449 46
Total	16,158 13	50,646 36	55,983 68	61,475 49	64,065 89
EXPENSES					
Power Purchased	9,328 14	19,191 12	22,028 75	25,875 69	31,081 79
Sub-Stn. Operation	579 90	1,617 35	1,651 06	1,557 16	1,752 93
" " Maint'ce...	46 19	237 97	200 54	16 70	71 99
Dist. System, Operation and Maintenance	249 06	2,069 73	1,630 72	2,515 22	1,985 74
Line Transformer M't'c'e.	640 56	242 25	148 48	1 56	44 37
Meter	152 97	254 38	261 33	37 34	153 44
Consumers' Premises–Exp.	.....	.....	501 90	.....	.....
Street Light Sys., Operation and Maintenance..	443 16	1,281 13	1,509 91	926 11	1,627 04
Promotion of Business ..	981 77	1,459 99	.....	62 45	15 37
Billing and Collecting ...	107 00	984 37	1,325 47	1,647 47	2,007 92
Gen. Office, Sal. and Exp..	607 53	4,213 82	2,339 27	1,918 44	1,900 16
Undistributed Expenses ..	.....	250 93	211 15	1,211 78	1,934 03
Int. and Deb. Payments..	1,105 87	9,724 03	10,536 75	12,989 75	14,398 80
Miscellaneous Expenses ..	.....	.....	.....	b 1,750 00	b 3 752 52
Total Expenses	14,242 15	41,527 07	42,345 33	50,724 89	60,726 10
Surplus	1,915 98	9,119 29	13,638 35	10,750 60	3,339 79
Loss	.....	.....	.....	.....	.....
Depreciation Charge .	850 00	7,250 00	3,420 00	4,631 50	5,250 00
Surp. Less Depr. Chg.	1,065 98	1,869 29	10,218 35	6,119 10	*1,910 30*

Italics denote losses.
"g" 3 months' operation.
"b" Patriotic Funds contributions.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914 and 1915

Guelph 16,799			St. Thomas 16,794			Chatham 12,714
1913	1914	1915	1913	1914	1915	1915
						o
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
11,528 09	16,920 54	15,514 10	11,125 50	13,221 00	16,517 37	5,581 54
15,075 61	15,923 51	12,692 86	16,097 41	13,480 75	13,422 48	2,806 81
42,091 34	38,148 46	38,404 28	36,550 26	44,247 13	44,780 45	449 70
9,500 04	9,590 66	9,298 95	10,989 22	11,025 36	14,199 64	7,616 36
2,531 74	1,516 42	1,947 98	361 15	869 76	984 54	.....
80,726 82	82,099 59	77,858 17	75,124 04	82,844 00	89,904 48	16,454 41
32,473 66	30,460 41	37,292 12	31,435 85	38,279 18	44,655 44	7,171 72
1,700 14	540 50	1,254 90	2,452 25	2,571 06	2,567 38	318 56
1,076 44	733 05	1,468 03	913 99	80 40	107 33	23 48
3,004 51	3,897 65	1,592 39	1,580 22	2,989 04	5,392 80	102 09
179 90	161 05	240 75	47 57	77 64	154 75	15 25
585 91	711 63	756 35	53 40	183 34	170 35	45 94
206 39	.....	.....	.....	.....	.....	.....
1,566 58	1,380 19	1,343 16	2,405 21	3,023 53	2,454 54	396 40
.....	.....	.....	.....	.....	1,224 10	326 00
430 35	2,257 35	2,695 89	339 43	1,604 98	1,393 43	810 65
3,424 77	3,003 77	3,710 93	1,593 77	2,733 80	3,037 32	1,630 14
1,730 98	2,351 61	2,943 66	739 67	967 72	2,248 54	871 85
10,273 27	10,273 27	10,273 28	7,402 65	7,406 14	8,359 74	5,463 85
d 884 95	d 834 02	d 976 72	.....	.....	.....	.....
57,567 85	56,604 50	64,548 18	48,964 01	59,916 83	71,765 72	17,175 88
23,158 97	25,495 09	13,309 99	26,160 03	22,927 17	18,138 76	.....
.....	.....	.....	.....	.....	.....	721 47
8,000 00	10,200 00	10,500 00	6,900 00	7,350 00	8,735 00	.....
15,158 97	15,295 09	2,809 99	19,260 03	15,577 17	9,403 76	.....

"o" 10 months' operation.
"d" Motor repairs.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of

Municipality	Galt			Woodstock		
Population	12,060			10,265		
——	1913	1914	1915	1913	1914	1915
EARNINGS						
	$ c.	$ c.	$ c.	$ c.	c.	$ c.
Domestic Light	10,535 38	15,797 16	17,024 42	6,495 02	8,807 40	10,472 14
Commercial Light	11,648 49	11,952 75	8,794 36	12,942 32	11,610 14	11,718 95
Power	16,575 61	23,826 87	30,547 84	20,262 52	19,832 26	20,742 18
Street Light	6,280 25	8,500 00	12,981 29	7,160 00	7,320 00	7,810 08
Miscellaneous	194 00	919 15	373 24	354 18	471 80	673 97
Total	45,233 73	60,995 93	69,721 15	47,214 04	48,041 60	51,417 32
EXPENSES						
Power Purchased	17,883 91	21,134 48	29,961 84	18,798 66	18,690 30	20,217 74
Sub-Stn. Operation	1,761 14	1,930 93	2,283 95	1,834 83	2,149 53	1,817 22
" " Maint'ce...	180 76	99 42	280 66	497 39	83 02	108 46
Dist. System, Operation and Maintenance	446 24	1,729 80	1,499 76	1,827 65	1,566 91	1,654 10
Line Transformer M't'c'e.	11 48	129 05	120 76	4 84	23 75	74 94
Meter	2 00	91 88	57 81	70 75	57 05	24 82
Consumers' Premises–Exp.	.....	208 64	.....	345 00	.....	.....
Street Light Sys., Operation and Maintenance..	296 88	2,234 06	3,066 10	1,142 30	1,665 72	584 03
Promotion of Business ..	.....	.....	.....	.....	.....	.....
Billing and Collecting ...	1,188 20	1,868 30	2,226 16	1,115 75	1,628 44	1,443 25
Gen. Office, Sal. and Exp..	1,792 40	1,618 71	2,713 64	2,513 73	3,050 10	3,007 93
Undistributed Expenses ..	.....	187 55	475 21	447 96	581 45	972 96
Int. and Deb. Payments..	9,721 64	10,337 35	13,269 15	6,853 83	7,219 04	7,290 95
Miscellaneous Expenses ..	.....	.....	.....	.....	b 500 00	b1,000 00
Total Expenses	33,284 65	41,570 20	55,955 04	35,806 87	37,215 31	38,196 40
Surplus	11,949 08	19,425 73	13,766 11	11,407 17	10,826 38	13,220 92
Loss	.....	.....	.....	.....	.....	.....
Depreciation Charge .	8,400 00	10,600 00	10,000 00	5,827 40	6,450 00	6,725 00
Surp. Less Depr. Chg.	3,549 08	8,825 73	3,766 11	5,579 77	4,376 38	6,495 92

Note —
"b" Contribution to Patriotic Fund

"C"—Continued

Hydro Municipalities for the years ending December 31st, 1913, 1914,and 1915

Welland 7,243			Barrie 7,088			Midland 6,375		
1913	1914	1915	1913	1914	1915	1913	1914	1915
f								
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1,369 67	4,411 20	4,643 16	10,071 55	11,149 49	11,087 68	6,095 11	6,941 07	6,580 45
558 46	1,676 38	1,600 79	9,252 70	9,464 64	9,572 91	6,104 16	5,048 06	4,462 54
4,307 21	8,305 71	38,541 88	3,393 45	3,712 24	4,567 76	5,700 22	6,484 43	10,229 52
1,395 00	5,049 00	5,235 75	4,292 53	4,572 75	5,075 00	3,463 07	3,728 76	3,100 00
.....	.....	865 65	583 28	137 89	145 51	.....	13 71	33 26
7,630 34	19,442 29	50,887 23	27,593 51	29,037 01	30,448 86	21,362 56	22,216 03	24,405 77
4,861 38	7,598 77	28,168 78	6,611 27	10,873 86	12,352 71	6,059 33	6,539 10	8,367 74
295 43	406 99	208 78	5,706 97	2,745 68	2,428 00	.....	.....	.....
.....	32 30	96 66	.....	.....	.....	.....	.....	.....
191 18	138 94	590 33	679 16	448 87	1,008 10	989 11	1,284 29	1,104 58
32 82	107 53	318 22	.....	.....	58 50	57 20	420 06	122 60
50	57 21	200 13	17 92	.....	151 73	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....
123 82	446 23	192 52	402 06	108 02	675 44	526 53	1,020 22	1,020 86
.....	.....	.....	.....	.....	.....	.....	.....	.....
317 42	748 38	455 39	.....	.....	.....	221 04	157 39	282 69
798 53	2,790 59	3,720 01	3,578 67	2,294 92	2,567 43	1,435 86	1,692 75	2,088 31
39 45	10 25	420 97	544 58	510 67	1,174 97	.....	107 63	.....
2,638 54	5,080 20	8,660 08	5,590 40	6,052 29	6,052 29	4,134 55	4,267 05	3,827 60
9,299 07	17,417 39	43,031 87	23,131 03	23,044 31	26,469 17	13,423 62	15,488 49	16,814 39
.....	2,024 90	7,855 36	4,462 48	5,992 70	3,979 69	7,938 94	6,727 54	7,591 39
1,668 73	.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	4,425 00	3,350 00	3,500 00	3,500 00	2,950 00	3,200 00	3,400 00
.....	2,024 90	3,430 36	1,112 48	2,492 70	479 69	4,988 94	3,527 54	4,191 39

Note—
"f" 4 months' operation

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of

Municipality	Collingwood			Ingersoll	
Population	6,361			5,200	
——	1913	1914	1915	1913	1914
EARNINGS					
	$ c.	$ c.	$ c.	$ c.	$ c.
Domestic Light	8,775 83	7,857 86	7,094 27	3,595 03	5,085 82
Commercial Light	7,600 00	7,555 54	5,688 26	6,048 51	6,359 72
Power	896 72	5,165 39	9,527 70	15,293 44	12,818 27
Street Light	3,802 88	4,647 00	4,715 00	4,262 02	3,960 04
Miscellaneous	106 21	.....	.....	976 99	250 88
Total	21,181 64	25,225 79	27,025 23	30.176 00	28,474 73
EXPENSES					
Power Purchased	7,480 48	10,450 24	13,733 50	11,966 61	11,441 79
Sub-Stn. Operation	1,952 60	2 25	.....	828 83	907 02
" " Maint'ce	.....	10 51	3 97	.....	.....
Dist. System, Operation and Maintenance	1,374 21	749 16	530 27	422 13	535 79
Line Transformer M't'c'e.	9 19	36 83	.....	187 39	113 54
Meter	13 37	15 25	.....	97 00	360 05
Consumers' Premises–Exp.	.....	.....	.....	.....	.....
Street Light Sys., Operation and Maintenance	133 20	664 19	477 36	440 09	274 54
Promotion of Business	.....	.....	.....	.....	.....
Billing and Collecting	252 08	302 39	526 63	560 15	543 73
Gen. Office, Sal. and Exp.	2,066 94	1,916 97	1,988 80	1,615 40	1,471 88
Undistributed Expenses	209 90	173 18	128 76	195 56	71 63
Int. and Deb. Payments	4,277 77	4,369 96	3,556 84	5,337 25	5,198 90
Miscellaneous Expenses			b 250 00	.....	.....
Total Expenses	17,769 94	18,690 93	21,196 13	21,650 41	20,918 87
Surplus	3,411 70	5,534 86	5,829 10	8,525 59	7,555 86
Loss	.....	.....	.....	.....	.....
Depreciation Charge	2,390 00	2,400 00	2,600 00	2,862 00	3,168 00
Surp. Less Depr. Chg.	1,021 70	4,134 86	3,229 10	5,663 59	4,387 86

"b" Patriotic Funds contributions.

"C"—Continued

Hydro Municipalities for the year ending December 31st, 1913, 1914 and 1915

Ingersoll		Preston			Waterloo		
5,200		4,942			4,908		
1915		1913	1914	1915	1913	1914	1915
					k		
$ c.		$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
5,480 52		5,477 10	6,520 39	6,615 91	4,263 66	4,723 94	5,401 82
5,716 91		5,366 77	5,011 15	4,488 76	5,098 42	4,825 22	5,284 87
16,251 18		21,017 68	21,975 26	21,698 34	14,970 14	13,282 12	15,125 32
3,564 80		2,594 55	2,778 48	2,830 50	5,294 10	5,137 84	5,773 20
610 56		232 47	98 53	15 00	.....	477 61	276 14
31,623 97		34,688 57	36,383 81	35,648 51	29,626 32	28,446 7	31,861 35
16,994 84		16,673 20	17,460 00	18,843 12	11,075 53	9,882 03	14,230 85
852 02		1,459 16	1,509 01	1,667 38	1,019 10	924 41	863 04
.....		49 21	28 33	30 10	81 00	182 23	315 50
446 05		1,238 36	2,368 26	1,656 67	378 74	794 51	2,013 65
277 77		280 22	139 99	149 14	32 13	42 90	2 65
297 19		79 67	86 01	56 28	54 67	193 53	61 72
.....		.....	.....	.....	.....	.....	.....
214 69		431 92	523 05	413 40	1,093 25	459 21	869 98
.....		.....	.....	.....	.....	.....	.....
668 26		656 75	739 90	822 42	866 90	756 25	926 41
1,561 32		415 98	568 69	496 56	2,520 00	2,519 64	2,463 40
82 63		183 85	585 82	1,340 06	709 44	323 72	431 95
5,046 35		4,120 54	7,300 84	7,212 87	3,676 92	3,473 33	4,284 71
.....		.....	.....	.....	.....	.....	.....
26,441 12		25,588 86	31,309 90	32,688 00	21,507 68	19,551 76	26,463 86
5,182 85		9,099 71	5,073 91	2,960 51	8,118 64	8,894 97	5,397 47
.....		.....	.....	.....	.....	.....	.....
3,200 00		2,924 00	3,400 00	3,800 00	3,100 00	3,500 00	4,000 00
1,982 85		6,175 71	1,673.91	*839 49*	5,018 64	5,394 97	1,397 49

Italics denote losses.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of

Municipality	Dundas			Goderich		Walkerville
Population	4,687			4,676		4,565
	1913	1914	1915	1914	1915	1914
Earnings						
Domestic Light	$ c. 3,045 85	$ c. 5,349 24	$ c. 6,139 97	$ c. 7,197 05	$ c. 6,072 51	$ c. 3,37 96
Commercial Light	4,193 27	4,198 64	4,310 96	4,196 49	5,066 76	1,492 84
Power	3,070 40	4,305 96	5,930 54	1,240 73	5,645 26	6,042 11
Street Light	60 10	3,050 85	3,460 35	5,525 00	5,525 00	1,716 61
Miscellaneous	930 81	.....	.....	.....	.....	.....
Total	11,300 43	16,904 69	19,841 82	18,159 27	22,309 53	12,289 52
Expenses						
Power Purchased	3,474 08	4,038 10	4,981 97	6,315 17	7,716 02	6,104 53
Sub-Stn. Operation	.....	.....	71 64	1,806 40	1,705 39	259 76
" " Maint'ce...	.....	.....	.....	.....	.....	1 75
Dist. System, Operation and Maintenance	154 77	840 00	1,448 70	167 83	312 13	502 81
Line Transformer M't'c'e.	35 80	74 75	91 00	11 25	113 65	3 00
Meter	4 40	31 18	61 42	15 94	13 43	13 25
Consumers' Premises–Exp.	.....	84 68	28 54	.....	.....	.....
Street Light Sys., Operation and Maintenance	.....	285 34	378 76	68 20	413 67	10 58
Promotion of Business	.....	789 93	.....	.....	.....	.....
Billing and Collecting	689 51	937 59	1,026 26	343 13	405 95	562 05
Gen. Office, Sal. and Exp.	1,642 56	1,876 50	1,905 51	204 85	185 28	1,499 11
Undistributed Expenses	.....	138 32	898 42	154 40	113 35	374 34
Int. and Deb. Payments.	1,970 14	4,504 12	5,706 69	4,182 09	4,447 27	1,908 19
Total Expenses	7,971 26	13,600 51	16,598 91	13,269 26	15,426 14	11,239 37
Surplus	3,329 17	3,304 18	3,242 91	4,890 01	6,883 39	1,050 15
Loss	.....	.....	.....	.....	.....	.....
Depreciation Charge	1,508 00	1,675 00	2,900 00	2,920 00	3,750 00	.....
Surp. Less Depr. Chg.	1,821 17	1,629 18	342 91	1,970 01	3,133 39	1,550 15

"C"—Continued

Hydro Municipalities for the year ending December 31st. 1913, 1914 and 1915

Walkerville	Paris		Simcoe	Brampton		
4,565	4,383		4,160	4,160		
1915	1914	1915	1915	1913	1914	1915
			e			
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
13,036 98	4,766 23	5,071 54	351 67	5,617 61	6,798 89	6,860 48
7,836 93	2,778 00	4,063 03	1,386 89	3,983 65	4,055 99	4,053 56
39,523 81	1,419 90	6,328 33	766 42	10,557 72	10,658 33	11,624 83
3,601 29	4,103 00	4,576 00	2,708 51	3,500 00	4,200 00	4,486 00
982 28	.....	.....	12 80	.....	.....	62 71
64,981 29	13,067 22	20,937 90	5,226 29	23,661 98	25,713 21	27,087 58
41,885 12	4,020 80	7,104 77	2,438 62	11,084 34	11,692 39	13,259 58
1,425 79	1,082 57	1,647 07	.....	26 11	58 58	30 95
39 86	.....	.....	.....	.....	.....	.....
1,132 37	1,299 26	1,325 58	3 70	231 54	522 54	1,032 33
163 19	13 45	20 00	.....	16 00	197 15	150 45
217 05	.....	2 05	.....	.....	51 31	13 15
.....	.....	.....	.....	.....	.....	.....
749 88	333 09	493 88	19 81	168 79	429 60	282 72
.....	.....	.....	.....	.....	.....	.....
2,039 70	.....	.....	.....	341 70	794 57	871 46
2,806 63	563 26	746 78	441 53	1,694 67	1,904 94	1,854 65
923 24	115 30	100 00	232 50	371 28	66 47	28 12
7,956 95	5,849 94	7,966 15	.....	3,781 42	4,936 36	4,799 34
59,339 78	13,277 67	19,406 28	3,136 16	17,716 05	20,653 91	22,322 75
5,641 51	.....	632 62	2,090 13	5,945 93	5,059 30	4,764 83
.....	210 45	.....	.....	.....	.....	.....
.....	.....	.....	.....	2,500 00	3,000 00	3,000 00
.....	.....	.....	.....	3,445 93	2,059 30	1,764 83

Notes—
"e" 9 months' operation.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

Municipality	Penetanguishene			Wallaceburg	St. Mary's
Population	4,107			4,107	3,960
——	1913	1914	1915	1915	1913
EARNINGS				y	
	$ c.	$ c.	$ c.	$ c.	$ c.
Domestic Light	1,989 80	1,936 73	2,050 69	4,079 74	3,815 77
Commercial Light	4,511 16	3,064 83	2,676 60	4,239 30	4,553 73
Power	8,775 95	8,001 69	10,048 08	87 32	8,221 72
Street Light	2,042 00	2,016 00	2,095 00	2,680 61	3,582 00
Miscellaneous	.....	.....	148 35	.....	.....
Total	17,318 91	15,019 25	17,018 72	11,086 97	20,173 22
EXPENSES					
Power Purchased	6,347 56	7,673 95	9,935 27	5,601 51	10,055 82
Sub-Stn. Operation	967 84	725 24	734 23	.....	728 39
" " Maint'ce	.....	3 25	1 66	.....	150 46
Dist. System. Operation and Maintenance	301 41	166 21	92 25	143 88	556 05
Line Transformer M't'c'e.	236 11	93 51	1 00	.....	519 39
Meter	.....	178 86	27 60	.....	202 56
Consumers' Premises–Exp.	.....	.....	.....	.....	.....
Street Light Sys., Operation and Maintenance	144 56	335 99	373 93	295 13	554 36
Promotion of Business	.....	131 74	58 88	.....	.....
Billing and Collecting	44 45	133 00	227 56	.....	263 21
Gen. Office, Sal. and Exp.	1,278 02	1,305 25	1,303 05	1,377 06	1,077 38
Undistributed Expenses	.....	3 00	.....	.....	75 63
Int. and Deb. Payments	2,035 90	1,986 09	1,981 39	3,580 84	4,616 15
Total Expenses	11,355 85	12,736 09	14,736 82	10,998 42	18,799 40
Surplus	5,963 06	2,283 16	2,281 90	88 85	1,373 82
Loss	.....	.....	.....	.....	.....
Depreciation Charge	1,820 00	1,960 00	2,000 00	.....	.....
Surp. Less Depr. Chg.	4,143 06	323 16	281 90	.....	1,373 82

"y" 11 months' operation.

"C"—Continued

Municipalities for the years ending December 31st, 1913, 1914 and 1915

St. Mary's 3,960		Tillsonburg 3,050			Strathroy 2,988
1914	1915	1913	1914	1915	1915
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
4,614 95	5,073 97	2,796 57	3,367 74	3,203 51	3,380 78
4,733 33	4,222 53	4,677 38	4,579 37	4,236 42	4,701 76
10,610 05	8,379 87	4,763 13	6,303 09	5,619 15	700 49
3,441 00	3,850 00	2,601 00	2,463 96	2,507 81	4,221 76
.....	178 00	1,163 11	863 28	667 61	.....
23,399 33	21,704 37	16,001 19	17,577 44	16,234 50	13,004 79
8,966 67	8,165 01	6,249 35	6,999 79	7,248 93	5,541 40
803 25	729 98	950 05	753 91	713 91	.....
195 00	.....	.....	.....	.....	.....
400 29	582 11	332 50	570 90	471 99	78 62
350 34	136 96	4 89	11 55	.....	.....
175 22	102 77	.....	16 47	4 40	.....
.....	.....	.....	.....	.....	.....
423 60	502 85	205 87	210 50	309 17	160 10
.....	.....	.....	.....	43 29	.....
257 03	296 57	907 04	923 46	1,003 63	.....
994 13	1,143 40	1,064 21	997 04	1,306 50	1,353 44
138 54	72 80	1,033 61	1,000 00	.....	.....
4,658 00	4,775 42	2,137 07	2,727 41	2,674 75	2,719 74
17,362 07	16,507 87	12,884 59	14,211 21	13,776 57	9,853 30
6,037 26	5,196 50	3,116 60	3,366 23	2,457 93	3,151 49
.....	.....	.....	.....	.....	.....
3,340 00	3,600 00	1,782 75	1,830 00	1,875 00	1,500 00
2,697 26	1,596 50	1,333 85	1,536 23	582 93	1,651 49

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

Municipality	Prescott		Hespeler		
Population	2,919		2,634		
——	1914	1915	1913	1914	1915
EARNINGS					
	$ c.	$ c.	$ c.	$ c.	$ c.
Domestic Light	7,472 75	4,058 14	2,206 75	2,635 41	2,787 48
Commercial Light	996 00	3,033 62	1,667 00	1,934 75	2,334 15
Power	1,099 27	3,431 45	5,044 30	6,116 27	9,017 58
Street Light	2,500 00	2,500 00	1,500 00	1,478 00	1,536 00
Miscellaneous	9 00	.....	.....	.....	.....
Total	12,077 02	13,023 21	10,418 05	12,164 43	15,675 21
EXPENSES					
Power Purchased	5,047 30	4,552 99	5,465 01	4,753 26	6,663 89
Sub-Stn. Operation	3,293 49	1,147 65	2,101 87	614 43	413 06
" " Maint'ce..	361 49	805 14	.....	.....	.....
Dist. System, Operation and Maintenance	767 49	929 36	638 83	565 16	431 37
Line Transformer M't'c'e.	.....	34 00	4 17	54 05	52 76
Meter	116 10	146 70	.....	.....	.....
Consumers' Premises–Exp.	.....	.....	.....	.....	.....
Street Light Sys., Operation and Maintenance..	119 00	210 22	57 50	111 92	139 02
Promotion of Business ..	.....	.....	.....	.....	.....
Billing and Collecting ..	37 82	81 94	.....	.....	.....
Gen. Office, Sal. and Exp..	1,165 23	1,503 78	735 23	1,207 23	481 99
Undistributed Expenses ..	169 62	260 23	272 67	112 50	112 50
Int. and Deb. Payments..	1,722 31	2,233 12	2,140 19	3,144 33	3,144 33
Total Expenses	12,799 85	11,905 13	11,415 47	10,562 88	12,438 82
Surplus	.....	1,118 08	.....	1,601 55	3,236 29
Loss	700 06	.....	997 42	.....	.....
Depreciation Charge .	1,950 00	2,000 00	.....	1,350 00	1,750 00
Surp. Less Depr. Chg.	*2,650 06*	*881 92*	.....	251 55	1,486 29

Italics denote losses.

"C"—Continued

Municipalities for the year ending December 31st, 1913, 1914 and 1915

Elmira		Weston			Clinton	
2,200		2,186			2,115	
1914	1915	1913	1914	1915	1914	1915
k						
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1,968 41	2,059 11	4,117 20	3,741 84	4,407 36	2,023 70	2,930 57
2,020 81	1,674 44	1,475 74	1,599 97	1,305 90	2,028 08	3,068 63
1,876 49	2,801 33	6,170 36	4,958 59	4,798 33	1,255 33	2,108 24
1,680 00	1,680 00	2,052 00	3,067 50	2,684 67	1,105 66	1,630 40
.....	3 75	24 88	.....	31 79	.....	118 31
7,545 71	8,218 63	13,840 18	13,367 90	14,228 05	6,412 77	9,856 15
3,077 56	3,361 63	5,159 49	5,783 87	5,536 71	2,291 20	3,835 94
.....	.....	.....	.....	.....	911 74	911 51
.....	.....	.....	.....	.....	.....	.....
.....	.....	791 77	662 71	1,181 11	80 99	146 80
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
102 55	83 64	574 25	451 99	419 20	145 74	298 61
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
1,170 47	1,090 84	927 35	1,668 62	1,264 78	1,182 42	1,569 57
31 17	.....	79 50	76 17	.....	32 29	.....
1,425 22	1,356 67	1,588 48	1,588 42	2,352 32	1,838 56	2,643 15
5,806 97	5,892 78	9,120 84	10,231 78	10,754 12	6,483 14	9,405 58
1,738 74	2,325 85	4,719 34	3,136 12	3,473 93	.....	450 57
.....	.....	.....	.....	.....	70 37	.....
650 00	750 00	1,390 00	1,450 00	1,520 00	.....	380 20
1,088 74	1,575 85	3,329 34	1,686 12	1,953 93	.....	70 37

"k" 13 months' operation.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

Municipality	Georgetown			Mimico	
Population	2,002			1,965	
——	1913	1914	1915	1913	1914
EARNINGS	f				
	$ c.	$ c.	$ c.	$ c.	$ c.
Domestic Light	661 49	3,069 02	2,999 83	2,021 06	5,085 16
Commercial Light	842 87	2,362 33	2,276 41	h	h
Power	234 32	2,976 61	8,734 01	795 49	963 64
Street Light	541 67	1,843 67	1,834 03	987 00	1,049 34
Miscellaneous	.....	.....	130 53	.....	.....
Total	2,280 35	10,251 63	15,974 81	3,803 55	7,098 14
EXPENSES					
Power Purchased	759 00	4,183 72	8,893 20	1,740 66	2,801 90
Sub-Stn. Operation	.....	.....	.....	.....	.....
" " Maint'ce	.....	.....	.....	.....	.....
Dist. System, Operation and Maintenance	12 85	192 11	137 03	144 79	53 29
Line Transformer M't'c'e.	.....	.....	.....	.....	.....
Meter	.....	.....	.....	.....	.....
Consumers' Premises–Exp.	.....	.....	.....	.....	.....
Street Light Sys., Operation and Maintenance	201 06	128 09	192 12	23 89	88 85
Promotion of Business	.....	.....	.....	.....	.....
Billing and Collecting	.....	.....	.....	.....	.....
Gen. Office, Sal. and Exp.	.....	895 46	955 08	265 61	674 73
Undistributed Expenses	.....	.....	.....	.....	.....
Int. and Deb. Payments	.....	1,466 55	1,929 67	845 02	1,561 45
Total Expenses	972 91	6,865 93	12,107 10	3,019 97	5,180 22
Surplus	1,307 44	3,385 70	3,867 71	783 58	1,917 92
Loss	.....	.....	.....	.....	.....
Depreciation Charge	300 00	850 00	1,280 00	740 00	920 00
Surp. Less Depr. Chg.	1,007 44	2,535 70	2,587 71	43 58	997 92

"f" 4 months' operation.

"C"—Continued

Municipalities for the year ending December 31st, 1913, 1914 and 1915

Mimico	Milton			Seaforth		
1,965	1,942			1,901		
1915	1913	1914	1915	1913	1914	1915
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
5,748 44	1,149 28	1,961 22	1,981 80	2,124 18	2,467 39	2,593 70
346 49	1,212 26	2,226 80	1,900 98	2,876 47	2,581 30	2,724 84
1,042 11	6,462 38	11,325 61	5,364 29	7,509 99	7,707 01	7,685 52
2,015 66	900 00	1,350 00	1,575 00	1,815 81	1,869 96	1,869 96
.....	143 18	455 62	.....	61 63	110 14	143 53
9,152 70	9,867 10	17,319 25	10,822 07	14,388 08	14,735 77	15,017 55
3,342 50	4,902 34	7,696 45	6,511 50	7,931 55	8,646 18	9,305 22
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
167 16	167 82	609 66	513 70	1,573 93	1,078 00	891 49
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
148 80	.....	86 16	169 82	317 37	638 57	314 55
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
892 39	42 27	572 05	819 70	368 67	529 05	548 30
.....	.....	.....	.....	.....	.....	.....
1,790 57	1,582 93	2,277 04	2,270 34	1,653 65	1,704 25	1,662 37
6,341 42	6,695 36	11,241 36	10,285 06	11,845 17	12,596 05	12,721 93
2,811 28	3,171 74	6,077 89	537 01	2,542 91	2,139 72	2,295 62
.....	.....	.....	.....	.....	.....	.....
1,200 00	900 00	1,250 00	1,090 00	1,300 00	1,466 00	1,450 00
1,611 28	2,271 74	4,827 89	*552 99*	1,242 91	739 72	845 62

Italics denote losses.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

Municipality	Acton			Tilbury
Population	1,803			1,726
——	1913	1914	1915	1915
				s
EARNINGS	$ c.	$ c.	$ c.	$ c.
Domestic Light	1,236 50	1,463 72	1,931 11	979 57
Commercial Light	1,567 48	1,496 18	1,725 73	1,476 53
Power	318 77	836 13	1,019 27	.....
Street Light	1,000 00	1,563 00	1,555 00	715 00
Miscellaneous	286 72	83 60	188 76	19 39
Total	4,409 47	5,442 63	6,419 87	3,190 49
EXPENSES				
Power Purchased	1,801 50	2,344 50	2,495 70	1,601 33
Sub-Stn. Operation	.....	.....	.....	.....
" " Maint'ce...	.....	.....	.....	.....
Dist. System, Operation and Maintenance	371 97	35 42	78 52	.....
Line Transformer M't'c'e.	.....	.....	.....	.....
Meter	.....	.....	.....	.....
Consumers' Premises–Exp.	.....	.....	.....	.....
Street Light Sys., Operation and Maintenance..	7 20	147 12	144 16	10 60
Promotion of Business ..	.....	.....	.....	.....
Billing and Collecting ...	.....	.....	.....	.....
Gen. Office, Sal. and Exp..	841 70	943 77	667 70	643 64
Undistributed Expenses ..	.....	.....	.....	.....
Int. and Deb. Payments..	442 00	1,124 06	1,124 06	668 57
Total Expenses	3,584 37	4,594 87	4,510 14	2,924 14
Surplus	825 10	847 76	1,909 73	266 35
Loss	.....	.....	.....	.....
Depreciation Charge .	500 00	500 00	500 00	.....
Surp. Less Depr. Chg.	325 10	347 76	1,409 73	.....

"s" 8 months' operation.

"C"—Continued

Municipalities for the year ending December 31st, 1913, 1914 and 1915

Mitchell 1,706			New Hamburg 1,612			Fergus 1,605
1913	1914	1915	1913	1914	1915	1915
						k
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
2,424 59	2,470 29	2,379 58	1,589 21	1,779 90	1,888 04	1,314 03
2,813 92	2,712 55	2,684 01	1,890 72	1,403 56	1,273 38	2,367 91
6,160 53	3,944 91	2,165 68	5,792 20	5,209 51	2,825 57	882 24
1,675 00	1,950 00	2,100 00	1,827 00	1,827 00	1,827 00	1,744 75
385 50	443 90	63 20	325 44	.....	351 77	99 65
13,459 54	11,521 65	9,392 47	11,424 57	10,219 97	8,165 76	6,408 58
6,858 86	4,882 39	4,424 38	5,206 00	4,770 26	3,144 80	2,598 37
12 35	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
81 25	66 52	486 96	323 40	380 19	469 01	23 77
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
44 64	34 12					
		26 10	.....	.....	177 00	97 28
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
1,223 80	1,315 10	1,258 61	1,194 68	995 47	1,055 70	1,208 84
100 00	.....	.....	.....	107 21	.....	.....
2,224 07	2,224 06	2,124 46	1,170 92	1,172 91	1,303 57	967 76
10,544 97	8,522 19	8,320 51	7,895 00	7,426 04	6,150 08	4,896 01
2,914 57	2,999 46	1,071 96	3,529 57	2,793 93	2,015 68	1,512 57
.....	.....	.....	.....	.....	.....	.....
1,150 00	1,200 00	1,000 00	900 00	900 00	900 00	650 00
1,764 57	1,799 46	71 96	2,629 57	1,893 93	1,115 68	862 57

"k" 13 months' operation.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

Municipality	Dresden	Port Dalhousie			Norwich	
Population	1,444	1,318			1,301	
	1915	1913	1914	1915	1913	1914
	s	m				
EARNINGS						
Domestic Light	$ c. 1,093 68	$ c. 3,742 54	$ c. 3,656 01	$ c.	$ c. 1,926 78	$ c. 2,168 13
Commercial Light	1,223 25	h	h	3,608 70	1,162 98	995 16
Power	.....	347 28	429 54	252 12	1,978 55	1,893 72
Street Light	1,100 00	1,246 67	880 00	968 00	1,285 50	1,197 00
Miscellaneous	153 51	.....	.....	.....	46 71	746 92
Total	3,570 44	5,336 49	4,965 55	4,828 82	6,400 52	7,000 93
EXPENSES						
Power Purchased	1,917 34	2,393 00	2,407 20	2,415 28	3,176 24	2,849 30
Sub-Stn. Operation	.....	.....	.....	.....	.....	.....
" " Maint'ce..	.....	.....	.....	.....	.....	.....
Dist. System, Operation and Maintenance	25 82	253 81	421 83	225 52	178 90	464 80
Line Transformer M't'c'e.	.....	.....	.....	.....	.....	13 48
Meter	.....	.....	.....	.....	.....	37 11
Consumers' Premises–Exp.	11 24	.....	.....	.....	.....	.....
Street Light Sys., Operation and Maintenance..	.....	8 74	65 28	25 75	79 51	95 40
Promotion of Business	.....	.....	.....	.....	.....	.....
Billing and Collecting	.....	.....	.....	.....	.....	.....
Gen. Office, Sal. and Exp..	729 57	302 30	712 50	1,014 54	838 27	534 15
Undistributed Expenses	.....	112 98	218 83	.....	.....	.....
Int. and Deb. Payments..	754 98	814 89	725 89	629 04	886 40	960 58
Total Expenses	3,438 95	4,785 72	4,551 53	4,310 13	5,159 32	4,954 82
Surplus	131 49	550 77	414 02	518 69	1,241 20	2,046 11
Loss	.....	.....	.....	.....	.....	.....
Depreciation Charge	.....	450 00	414 02	415 00	500 00	530 00
Surp. Less Depr. Chg.	.....	100 77	.....	103 69	741 20	1,516 11

"s" 8 months' operation.

"C"—Continued

Municipalities for the year ending 31st December, 1913, 1914 and 1915

Norwich	Elora		Caledonia			Victoria Harbor
1,301	1,216		1,202			1,200
1915	1914	1915	1913	1914	1915	1915
	i		o			g
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
2,529 91	101 98	1,044 49	404 60	880 54	265 62	105 79
1,075 79	167 25	1,820 07	h	h	950 38	117 85
2,169 31	.....	197 78	470 34	188 54	138 42	.....
1,126 00	110 33	1,000 00	584 00	780 00	808 00	141 00
2,504 61	.....	214 97	.....	.....	.....	.....
9,405 62	379 56	4,277 31	1,458 94	1,849 08	2,162 42	364 64
2,954 63	133 05	1,711 73	766 70	669 00	793 00	172 82
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
809 58	.....	274 00	23 05	92 95	53 58	17 89
7 05	.....	.....	.....	.....	.....	.....
1 32	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
75 95	24 78	61 52	.....	35 80	22 28	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
595 76	66 19	785 52	48 28	66 82	92 76	30 00
.....	.....	.....	.....	.....	.....	.....
1,985 15	125 35	846 15	134 47	122 86	361 72	.....
6,429 44	349 37	3,678 92	972 50	987 43	1,343 34	220 71
2,976 18	30 19	598 39	486 44	861 65	819 08	143 93
.....	.....	.....	.....	.....	.....	.....
1,195 00	.....	460 00	250 00	260 00	300 00	.....
1,781 18	30 19	138 39	236 44	601 65	519 08	.....

"i" 1 month's operation.
"o" 10 months' operation.
"g" 3 months' operation.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of

Municipality	New Toronto		Waterford	Hagersville	
Population	1,153		1,134	1,091	
——	1914	1915	1915	1913	1914
EARNINGS				g	
	$ c.	$ c.	$ c.	$ c.	$ c.
Domestic Light	653 56	.....	685 22	81 42	1,222 33
Commercial Light	h	1,416 10	546 08	h	h
Power	.....	2,140 36	.....	746 85	2,679 08
Street Light	600 00	783 00	892 50	300 00	1,200 00
Miscellaneous	.....	.....	.....	.....	.....
Total	1,253 56	4,339 46	2,123 80	1,128 27	5,101 41
EXPENSES					
Power Purchased	233 30	1,351 92	931 11	967 23	3,084 34
Sub-Stn. Operation	.....	.....	.....	.....	.....
" " Maint'ce	.....	.....	.....	.....	.....
Dist. System, Operation and Maintenance	50 73	137 80	26 30	.....	52 15
Line Transformer M't'c'e	.....	.....	.....	.....	.....
Meter	.....	.....	.....	.....	.....
Consumers' Premises–Exp	.....	.....	.....	.....	.....
Street Light Sys., Operation and Maintenance	137 85	55 00	23 16	.....	73 00
Promotion of Business	.....	.....	.....	.....	.....
Billing and Collecting	.....	.....	.....	.....	.....
Gen. Office, Sal. and Exp.	318 01	629 49	78 41	37 69	545 77
Undistributed Expenses	.....	.....	.....	.....	.....
Int. and Deb. Payments.	178 44	654 10	978 56	97 60	383 93
Total Expenses	918 33	2,828 31	2,037 54	1,102 52	4,139 19
Surplus	335 23	1,511 15	86 26	25 75	962 22
Loss	.....	.....	.....	.....	.....
Depreciation Charge	200 00	550 00	.....	.....	425 00
Surp. Less Depr. Chg.	135 23	961 15	.....	.....	537 22

"g" 3 months' operation.

"C"—Continued

Hydro Municipalities for the year ending December 31st, 1913, 1914 and 1915

Hagersville	Winchester		Beaverton	Stayner		
1,091	1,044		965	950		
1915	1914	1915	1915	1913	1914	1915
			t	n		
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
1,172 85	2,972 09	1,698 40	1,484 62	158 48	909 58	995 47
1,592 59	h	1,336 85	1,149 67	116 91	747 93	933 55
2,434 62	.....	.....	456 74	301 86	1,699 08	1,694 94
1,200 00	1,500 00	1,500 00	1,057 72	35 00	707 50	607 25
.....	.....	.....	109 08	.....	.....	.....
6,400 06	4,472 09	4,535 25	4,257 83	612 25	4,064 09	4,231 21
3,010 99	1,827 07	2,137 86	4,002 69	187 52	2,726 45	2,524 18
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
156 80	2 32	501 85	83 17	.....	56 85	67 53
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
58 37	58 50	60 26	.....	.....	96 00	53 78
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
595 22	173 09	380 55	152 02	14 48	31 00	98 02
.....	.....	.....	.....	.....	.....	.....
577 57	541 80	795 91	884 64	340 82	784 66	784 66
4,398 94	2,602 78	3,876 43	5,122 52	542 82	3,694 96	3,528 17
2,001 12	1,869 31	658 82	.....	69 43	369 13	703 04
.....	.....	.....	864 69	.....	.....	.....
500 00	500 00	465 00	.....	.....	115 00	300 00
1,501 12	1,369 31	193 82	.....	69 43	254 13	403 04

"n" 2 months' operation.
"t" 14 months' operation.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of

Municipality	Pt. Credit			Cannington	Ayr
Population	944			917	910
——	1913	1914	1915	1915	1915
				t	y
EARNINGS					
	$ c.	$ c.	$ c.	$ c.	$ c.
Domestic Light	1,963 22	2,461 42	1,975 29	1,599 40	892 63
Commercial Light	c	c	587 11	1,120 04	773 08
Power	848 59	308 88	236 47	464 26	348 78
Street Light	696 00	810 60	1,000 00	980 12	1,091 33
Miscellaneous				22 58	
Total	3,507,81	3,580 90	3,798 87	4,186 40	3,105 82
EXPENSES					
Power Purchased	1,210 65	1,333 00	1,406 46	3,852 03	1,170 61
Sub-Stn. Operation					
" " Maint'ce					
Dist. System, Operation and Maintenance	22 21	23 51	77 77	251 70	
Line Transformer M't'c'e.					
Meter					
Consumers' Premises–Exp.					
Street Light Sys., Operation and Maintenance.	121 27	72 77	22 29	11 04	45 20
Promotion of Business					
Billing and Collecting					
Gen. Office, Sal. and Exp.	171 82	450 67	470 75	223 48	397 82
Undistributed Expenses		18 46			
Int. and Deb. Payments	534 23	571 55	537 22	1,006 80	1,119 49
Total Expenses	2,060 18	2,469 96	2,514 49	5,345 05	2,733 12
Surplus	1,447 63	1,110 94	1,284 38		372 70
Loss				1,158 65	
Depreciation Charge	446 00	535 00	600 00		250 00
Surp. Less Depr. Chg.	1,001 63	575 94	684 38		122 70

"t" 14 months' operation.
"y" 11 months' operation.

"C"—Continued

Hydro Municipalities for the years ending December 31st, 1913, 1914 and 1915

Dutton		Chesterville		Pt. Stanley		
890		885		876		
1915		1914	1915	1913	1914	1915
g						
$	c.	$ c.	$ c.	$ c.	$ c.	$ c.
318	85	530 13	919 27	1,828 66	2,066 41	2,498 57
206	59	791 67	1,187 54	1,771 70	1,753 60	1,736 42
.....		.....	.....	2,418 00	2,170 88	2,064 76
364	23	465 00	689 00	2,199 50	1,961 35	1,900 50
.....		.....	.....	.....	157 77	226 18
889	67	1,786 80	2,795 81	8,217 86	8,110 01	8,426 43
442	18	1,107 66	2,123 30	3,506 43	3,682 26	4,735 96
.....		.....	.....	.....	.....	.....
.....		.....	.....	.....	.....	.....
15	55	.....	126 30	354 49	116 92	65 01
.....		.....	.....	.....	.....	.....
.....		.....	.....	.....	.....	.....
.....		.....	.....	.....	.....	.....
12	04	.....	.....	.....	.....	63 13
.....		.....	.....	.....	.....	.....
.....		.....	.....	292 81	286 23	.....
79	30	59 00	56 77	368 47	581 96	919 21
.....		.....	.....	.....	.....	.....
144	70	344 00	572 55	1,188 91	1,232 82	1,232 82
693	77	1,510 66	2,878 92	5,711 11	5,900 19	7,016 13
195	90	276 14	.....	2,506 75	2,209 82	1,410 30
.....		.....	83 11	.....	.....	.....
.....		247 50	.....	617 75	950 00	740 00
.....		28 64	.....	1,889 00	1,259 82	670 30

"g" 3 months' operation.

STATEMENT

Comparative Detailed Operative Reports of Electric Departments of

Municisality	Waterdown			Elmvale	
Population	817			775	
——	1913	1914	1915	1913	1914
EARNINGS				w	
	$ c.	$ c.	$ c.	$ c.	$ c.
Domestic Light	1,164 29	1,054 13	1,202 41	284 34	673 18
Commercial Light	h	535 83	567 65	358 60	896 11
Power	917 63	1,011 38	1,207 80	.....	438 38
Street Light	435 00	510 00	580 80	302 00	624 00
Miscellaneous	.....	418 46	1,488 36	.....	.....
Total	2,516 94	3,529 80	5,046 22	944 94	2,631 67
EXPENSES					
Power Purchased	988 00	1,660 71	1,605 10	506 33	898 78
Sub-Stn. Operation	.....	.....	.....	.....	.....
" " Maint'ce	.....	.....	.....	.....	.....
Dist. System, Operation and Maintenance	183 71	67 66	281 36	7 86	326 94
Line Transformer M't'c'e.	.....	.....	.....	.....	.....
Meter	.....	.....	.....	.....	.....
Consumers' Premises–Exp.	.....	.....	.....	.....	.....
Street Light Sys., Operation and Maintenance	35 31	48 15	17 00	.....	.....
Promotion of Business	.....	.....	.....	.....	.....
Billing and Collecting	.....	.....	.....	.....	.....
Gen. Office, Sal. and Exp.	213 14	207 87	327 69	75 12	434 67
Undistributed Expenses	.....	.....	.....	.....	.....
Int. and Deb. Payments	521 56	723 09	1,243 23	449 76	434 67
Total Expenses	1,941 72	2,707 48	3,474 38	1,039 07	2,108 42
Surplus	575 22	822 32	1,571 84	.....	523 25
Loss	.....	.....	.....	94 13	.....
Depreciation Charge	365 00	420 00	1,000 00	.....	350 00
Surp. Less Depr. Chg.	210 22	402 32	571 84	.....	173 25

"C"—Continued

Hydro Municipalities for the year ending December 31st, 1913, 1914 and 1915

Elmvale	Lucan'	Baden			Thamesville
775	720	710			708
1915	1915	1913	1914	1915	1915
	y				g
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
704 12	824 07	884 11	1,247 81	.....	378 79
778 93	687 37	h	h	938 33	283 86
1,186 44	18 66	2,242 77	4,580 23	4,588 87	.....
624 00	812 60	830 95	705 68	580 06	255 00
.....	.....	.....	.....	.....	.....
3,293 49	2,342 70	3,957 83	6,533 72	6,107 26	917 65
1,335 80	1,511 32	2,807 04	4,541 56	4,153 75	537 22
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
300 00	.....	28 84	179 28	52 26	4 15
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
15 17	.....	.....	14 52	43 53	40 00
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....
213 27	440 03	267 45	389 45	357 10	116 00
.....	.....	.....	.....	.....	.....
546 42	412 43	325 26	325 26	373 71	.....
2,410 66	2,363 74	3,428 59	5,450 07	4,980 35	697 37
882 83	.....	529 24	1,083 65	1,126 91	220 28
.....	21 08	.....	.....	.....	.....
385 00	.....	277 00	280 00	300 00	.....
497 83	.....	252 24	803 65	826 91	.....

"y" 11 months' operation.
"g" 3 months' operation.

STATEMENT

Comparative Detailed Operating Reports of Electric Departments of Hydro

Municipality	Bothwell	Burford	Bolton	Wood-bridge	Rockwood	
Population	707	700	674	651	650	
——	1915	1915	1915	1915	1913	1914
	g	w	o		f	
EARNINGS	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Domestic Light	230 61	176 14	624 86	367 49	230 27	848 55
Commercial Light	191 21	111 81	553 80	443 53	c	h
Power	.....	235 76	313 74	498 44	480 82	1,542 01
Street Light	219 25	279 48	811 25	960 00	196 00	549 50
Miscellaneous	.....	.....	.....	.....	.....	.....
Total	641 07	803 19	2,303 65	2,269 46	907 09	2,940 06
EXPENSES						
Power Purchased	440 00	571 55	1,126 94	877 63	237 50	1,113 49
Sub-Stn. Operation	.....	.....	.....	.....	.....	.....
" " Maint'ce	.....	.....	.....	.....	.....	.....
Dist. System, Operation and Maintenance	.....	.....	206 57	66 65	.....	.....
Line Transformer M't'c'e.	.....	.....	.....	.....	.....	.....
Meter	.....	.....	.....	.....	.....	.....
Consumers' Premises–Exp.	.....	.....	.....	.....	.....	.....
Street Light Sys., Operation and Maintenance.	36 72	.....	12 12	24 96	.....	36 14
Promotion of Business	.....	.....	.....	.....	.....	.....
Billing and Collecting	.....	.....	.....	.....	.....	.....
Gen. Office, Sal. and Exp.	4 80	77 06	314 26	153 75	44 46	119 55
Undistributed Expenses	.....	.....	.....	.....	.....	.....
Int. and Deb. Payments	.....	201 21	552 32	239 38	357 49	413 19
Total Expenses	481 52	849 82	2,212 21	1,362 37	639 45	1,682 37
Surplus	159 55	.....	91 44	907 09	267 64	1,257 69
Loss	.....	46 63	.....	.....	.....	.....
Depreciation Charge	.....	.....	.....	425 00	.....	275 00
Surp. Less Depr. Chg.	.....	.....	.....	482 09	267 64	982 69

"g" 3 months' operation.
"f" 4 months' operation.
"w" 6 months' operation.
"o" 10 months' operation.

"C"—Continued

Municipalities for the year ending 31st December 1913, 1914 and 1915

Rockwood	Coldwater			Waubaushene	St. George	Princeton	Creemore
650	614			600	600	600	582
1915	1913	1914	1915	1915	1915	1915	1914
				y	f	y	n
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
731 97	735 68	853 56	874 94	516 34	203 23	440 42	97 31
251 27	h	589 85	703 35	220 50	139 16	71 57	127 31
907 57	247 19	617 26	363 88	32 28	311 30	.....	39 60
507 50	532 00	528 00	528 00	377 00	202 50	340 00	138 80
.....	.....	.....	.....	.....	.....	.....	.....
2,398 31	1,514 87	2,588 67	2,470 17	1,146 12	856 19	851 99	403 02
1,154 85	535 86	897 12	1,018 75	560 77	411 15	507 23	162 00
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	74 58	139 37	138 72	16 55	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
13 92	32 92	32 00	20 00	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....
115 74	1 50	68 00	80 00	175 55	64 30	11 84	6 14
.....	.....	.....	300 00	.....	.....	.....	.....
445 80	.....	481 64	481 64	220 84	172 00	263 35	20 59
1,730 31	644 86	1,618 13	2,039 11	973 21	647 45	782 42	188 73
668 00	870 01	970 54	431 06	172 91	208 74	69 57	214 29
.....	.....	.....	.....	.....	.....	.....	.....
300 00	375 00	380 00	380 00	.....	.....	.....	.....
368 00	495 01	590 54	51 06	.....	.....	.....	214 29

"y" 11 months' operation.
"f" 4 months' operation.
"n" 2 months' operation.

STATEMENT

Comparative Detailed Operative Reports of Electric Developments of

Municipalities	Creemore	Sunderland	Plattsville	Beachville	
Population	582	570	550	503	
——	1915	1915	1915	1913	1914
		t		x	
EARNINGS	$ c.	$ c.	$ c.	$ c.	$ c.
Domestic Light	699 81	794 83	551 39	562 37	587 33
Commercial Light	937 84	939 85	477 71	c	c
Power	939 20	.....	1,128 27	5,993 81	5,368 04
Street Light	857 28	323 82	498 00	206 03	430 00
Miscellaneous	1 35	20 08	.....	.....	.....
Total	3,435 48	2,078 58	2,655 37	6,762 21	6,385 37
EXPENSES					
Power Purchased	2,580 53	2,229 13	2,031 19	4,221 68	3,283 89
Sub-Stn. Operation	.....	.....	.....	.....	.....
" " Maint'ce	.....	.....	.....	.....	.....
Dist. System, Operation and Maintenance	185 17	.....	.....	54 34	34 85
Line Transformer M't'c'e.	.....	.....	.....	.....	.....
Meter	.....	.....	.....	.....	.....
Consumers' Premises–Exp.	.....	.....	.....	.....	.....
Street Light Sys., Operation and Maintenance	14 80	24 96	14 02	76 37	44 46
Promotion of Business	.....	.....	.....	.....	.....
Billing and Collecting	.....	.....	.....	.....	.....
Gen. Office, Sal. and Exp.	221 98	33 27	85 42	249 50	193 11
Undistributed Expenses	.....	.....	.....	127 62	29 18
Int. and Deb. Payments	509 55	399 07	386 29	288 88	501 45
Total Expenses	3,512 03	2,686 43	2,516 92	5,018 39	4,086 40
Surplus	.....	.....	138 45	1,743 82	2,298 97
Loss	76 55	607 85	.....	.....	.....
Depreciation Charge	.....	.....	.....	525 00	400 00
Surp. Less Depr. Chg.	.....	.....	.....	1,218 82	1,898 97

"t" 14 months' operation.

"C"—Continued

Hydro Municipalities for the years ending December 31st, 1918, 1914 and 1915

Beachville 503	Brechin 1915	Comber	Drumbo	Delaware	Dorchester	Embro
1915		1915	1915	1915	1915	1915
		u		o		y
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
363 33	148 83	214 87	304 39	146 16	579 23	400 50
296 37	407 78	274 49	288 99	114 18	309 88	489 67
5,593 15	1,007 59	.....	159 85	.....	287 95	.....
430 00	117 00	448 37	455 00	188 18	85 72	620 68
.....	.....	.....	.....	.....	.....	.....
6,682 85	1,681 20	937 73	1,208 23	448 52	1,262 78	1,510 85
4,522 88	2,578 40	620 24	795 36	217 11	583 47	782 02
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
27 76	.....	.....	.....	.....	.....	16 00
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
9 95	.....	.....	.....	.....	.....	36 28
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
258 66	86 22	135 76	51 29	71 89	58 54	95 98
.....	.....	.....	.....	.....	.....	.....
357 79	96 80	172 92	281 33	77 13	159 47	285 25
5,177 04	2,761 42	928 92	1,127 98	366 13	801 48	1,215 53
1,505 81	.....	8 81	80 25	82 39	461 30	295 32
.....	1,080 22	.....	.....	.....	.....	.....
420 00	.....	.....	.....	.....	200 00	250 00
1,085 81	.....	.....	.....	.....	261 30	45 32

"v" 7 months' operation.
"o" 10 months' operation.
"y" 11 months' operation.

STATEMENT

Comparative Detailed Operative Reports of Electric Departments of

Municipality Population	Lynden	Lambeth	Mt. Brydges	Pt. McNicol	Thamesford
——	1915	1915	1915	1915	1914
	n	e	e	y	o
EARNINGS	$ c.	$ c.	$ c.	$ c.	$ c.
Domestic Light	60 00	344 47	.....	415 03	393 49
Commercial Light	28 94	119 00	427 45	311 20	323 92
Power	.....	559 82	517 50	.....	946 32
Street Light	67 50	295 16	449 66	351 00	372 16
Miscellaneous	.....	.....	.....	.....	.....
Total	156 44	1,318 45	1,394 61	1,077 23	2,035 89
EXPENSES					
Power Purchased	55 95	1,316 08	1,025 71	616 27	1,031 10
Sub-Stn. Operation	.....	.....	.....	.....	.....
" " Maint'ce..	.....	.....	.....	.....	.....
Dist. System, Operation and Maintenance	.....	20 10	22 05	18 88	9 80
Line Transformer M't'c'e.	.....	.....	.....	.....	.....
Meter	.....	.....	.....	.....	.....
Consumers' Premises–Exp.	.....	.....	.....	.....	.....
Street Light Sys., Operation and Maintenance..	.....	.....	.....	24 24	23 68
Promotion of Business ..	.....	.....	.....	.....	.....
Billing and Collecting ...	.....	.....	.....	.....	.....
Gen. Office, Sal. and Exp..	.....	44 71	117 38	164 58	125 94
Undistributed Expenses ..	.....	.....	.....	.....	.....
Int. and Deb. Payments..	.....	156 10	358 60	203 14	249 94
Total Expenses	55 95	1,536 99	1,523 74	1,027 11	1,440 46
Surplus	100 49	.....	.....	50 12	595 43
Loss	.....	218 54	129 13	.....	.....
Depreciation Charge .	.....	.....	.....	.....	250 00
Surp. Less Depr. Chg.	.....	.....	.....	.....	345 43

"n" 2 months' operation.
"e" 9 months' operation.
"y" 11months' operation.

"C"—Continued

Hydro Municipalities for the years ending December 31st, 1913, 1914 and 1915

Thamesford	Woodville	Williamsburg	Thorndale		Toronto Township	
1915	1915	1915	1914	1915	1914	1915
	t		o		p	
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
574 34	324 34	403 72	446 27	299 37	8,151 12	8,615 27
481 78	563 68	139 26	h	374 09	.....	.....
423 21	1,149 17	.....	329 27	542 53	.....	.....
469 00	507 60	156 00	294 00	294 00	.....	.....
.....	.....	.....	.....	.....	.....	.....
1,948 33	2,544 89	698 98	1,069 54	1,509 99	8,151 12	8,615 27
993 40	3,815 56	318 62	510 00	883 86	3,085 55	2,153 94
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
7 19	12 00	82 50	5 25	71 52	284 02	706 20
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
27 47	26 64	.....	29 04	7 19	.....	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
159 32	42 87	30 02	94 12	64 63	374 61	376 04
.....	.....	.....	.....	.....	.....	.....
209 41	295 48	211 27	109 92	11 74	1,358 65	3,482 49
1,396 79	4,192 55	642 41	748 33	1,138 94	5,102 83	6,718 67
551 54	.....	56 57	321 21	371 05	3,048 29	1,896 60
.....	1,647 66	.....	.....	.....	.....	.....
250 00	.....	.....	130 00	135 00	.....	1,800 00
301 54	.....	.....	191 21	236 05	3,048 29	96 60

"t" 14 months' operation.
"s" 8 months' operation.
"o" 10 months' operation.
"p" 17 months' operation.

STATEMENT "D"

Showing Comparative Revenue and Number of Consumers in Municipalities in which Hydro Power has been in use for Two Years or More.

Municipality	Year	Revenue				Consumers			
		Domestic Lt.	Commercial Lt.	Power	Street Lt.	Domestic	Commerc'l	Power	Total
		$ c.	$ c.	$ c.	$ c.				
Toronto	1912	201,554 74	*	225,451 55	275,666 23	11,441	*	518	11,959
	1913	190,376 89	233,799 04	347,708 88	344,933 79	16,519	4,764	1,037	22,320
	1914	289,645 45	305,534 31	483,681 15	364,214 17	23,181	6,276	1,494	30,951
	1915	331,807 18	291,907 92	575,239 17	350,085 97	29,724	7,227	1,504	38,455
Ottawa	1912	62,598 18	51,365 91	25,299 94	40,970 21	5,390	440	90	5,920
	1913	68,032 27	53,438 04	26,978 76	49,199 56	5,766	818	152	6,736
	1914	68,767 48	51,769 72	31,748 23	33,895 95	6,342	852	156	7,350
	1915	67,441 19	46,636 99	32,126 50	36,989 47	7,338	1,060	140	8,538
Hamilton	1913	34,451 95	25,453 99	47,415 58	2,250 89	5,117	924	209	6,250
	1914	74,668 38	35,125 57	70,665 43	51,154 36	8,404	1,375	337	10,116
	1915	92,207 60	34,633 16	84,789 71	86,179 51	10,595	1,434	406	12,435
London	1912	28,196 62	28,527 44	52,633 00	29,270 00	3,851	792	158	4,801
	1913	41,932 42	39,256 07	79,758 96	28,372 00	5,201	1,007	198	5,406
	1914	57,473 08	47,593 44	130,936 35	30,535 83	6,299	1,075	249	7,649
	1915	57,184 75	43,751 37	148,567 23	31,168 87	7,326	1,046	271	8,643
Brantford	1914	7,103 77	5,392 87	647 69	21,724 64	1,184	300	11	1,495
	1915	13,629 36	10,746 67	12,901 29	28,691 05	1,615	321	18	1,954
Windsor	1914	3,143 41	1,107 38	9 77	3,997 85	1,802	257	10	2,069
	1915	23,161 57	12,009 99	3,734 81	31,947 11	2,519	377	43	2,939
Peterboro'	1914	8,661 71	7,749 91	7,013 23	3,081 59	2,692	507	93	3,292
	1915	27,998 24	27,563 41	30,185 83	12,294 64	3,221	602	113	3,936
Berlin	1912	14,585 02	19,080 32	28,654 23	12,387 63	1,022	422	105	1,549
	1913	15,291 37	19,548 91	35,655 90	16,155 75	1,291	470	127	1,888
	1914	17,757 08	19,549 45	49,173 17	16,544 11	1,694	519	130	2,343
	1915	19,108 60	16,807 15	54,732 50	17,017 43	2,032	546	138	2,716
Pt. Arthur	1913	81,830 66	*	51,748 11	14,709 41	2,409	500	55	2,964
	1914	38,097 65	32,933 91	92,804 49	15,458 88	2,969	550	55	3,574
	1915	32,048 37	28,662 58	85,060 78	16,726 46	2,800	550	50	3,400
St. Catharines	1914	2,013 49	412 75	12,742 98	944 63	833	92	20	945
	1915	9,540 70	3,810 11	25,193 30	11,579 42	1,612	192	34	1,838
Stratford	1912	6,942 56	14,661 16	8,834 40	9,272 00	640	316	76	1,032
	1913	11,550 71	17,072 61	14,272 59	9,272 00	1,042	367	92	1,501
	1914	15,180 91	16,336 30	16,519 24	9,272 00	1,403	396	99	1,898
	1915	16,967 58	14,766 75	15,415 78	15,466 32	1,724	439	104	2,267
Guelph	1912	10,251 87	16,400 57	30,139 00	11,000 00	960	345	73	1,378
	1913	11,528 07	15,075 61	42,091 34	9,500 04	1,260	400	85	1,745
	1914	16,920 54	15,923 51	38,148 46	9,590 66	1,573	441	80	2,094
	1915	15,514 10	12,692 86	38,404 28	9,298 95	1,824	474	81	2,379
St. Thomas	1912	7,596 01	18,741 74	14,761 30	12,208 30	620	300	60	980
	1913	11,125 50	16,097 41	36,550 26	10,989 72	951	329	70	1,350
	1914	13,221 00	13,480 75	44,247 13	11,025 36	1,499	384	92	1,975
	1915	16,517 37	13,422 48	44,780 45	14,199 64	1,903	434	101	2,438
Galt	1912	8,183 69	9,732 86	10,042 59	5,000 70	830	250	47	1,127
	1913	10,535 38	11,648 49	16,575 61	6,280 25	1,122	353	65	1,540
	1914	15,797 16	11,952 75	23,826 87	8,500 00	1,745	339	70	2,154
	1915	17,024 42	8,794 36	30,547 84	12,981 29	2,038	375	75	2,488
Woodstock	1912	4,914 92	13,316 02	21,087 61	5,400 00	464	265	43	772
	1913	6,495 02	12,942 32	20,262 52	7,160 00	636	282	55	973
	1914	8,807 40	11,610 14	19,832 26	7,320 00	949	337	57	1,343
	1915	10,472 14	11,718 95	20,742 18	7,810 08	1,099	360	62	1,521
Welland	1913	1,369 67	558 46	4,307 21	1,395 00	408	53	18	479
	1914	4,411 20	1,676 38	8,305 71	5,049 00	492	53	23	568
	1915	4,643 16	1,600 79	38,541 88	5,235 75	467	57	23	547
Barrie	1913	10,071 55	9,252 70	3,390 29	4,292 53	563	200	13	776
	1914	11,149 49	9,464 64	3,712 24	4,572 75	651	200	13	864
	1915	11,087 68	9,572 91	4,567 76	5,075 00	843	252	14	1,109

STATEMENT "D"—Continued

Showing Comparative Revenue and Number of Consumers in Municipalities in which Hydro Power has been in use for Two Years or More.

Municipality	Year	Revenue				Consumers			
		Domestic Lt.	Commercial Lt.	Power	Street Lt.	Domestic	Commerc'l	Power	Total
		$ c.	$ c.	$ c.	$ c.				
Midland	1912	5,878 05	5,878 05	3,188 03	3,777 65	420	165	18	603
	1913	6,095 11	6,104 16	5,700 22	3,433 07	491	172	25	688
	1914	6,941 07	5,084 06	6,484 43	3,728 76	621	176	32	829
	1915	6,580 45	4,462 54	10,229 52	3,100 00	689	188	39	916
Collingwood	1913	7,013 66	9,362 17	896 72	3,802 88	477	220	18	715
	1914	7,857 86	7,555 54	5,165 39	4,647 00	554	232	21	807
	1915	7,094 27	5,688 26	9,527 70	4,715 00	622	233	26	881
Ingersoll	1912	3,073 73	6,648 28	14,430 66	3,000 00	220	142	38	400
	1913	3,595 03	6,048 51	15,293 44	4,262 03	278	170	44	492
	1914	5,085 32	6,359 72	12,818 27	3,960 04	416	194	48	658
	1915	5,480 52	5,716 91	16,251 18	3,564 80	497	197	52	746
Preston	1912	4,234 68	5,237 99	15,478 14	2,585 00	341	131	21	492
	1913	5,477 10	5,366 77	21,017 68	2,594 55	526	151	28	705
	1914	6,520 39	5,011 15	21,975 26	2,778 48	629	165	29	823
	1915	6,615 91	4,488 76	21,698 34	2,830 59	714	174	30	918
Waterloo	1912	4,057 46	4,524 93	11,545 93	4,538 82	239	112	35	386
	1913	4,263 66	5,098 42	14,970 14	5,294 10	321	125	44	490
	1914	4,723 94	4,825 22	13,282 14	5,137 84	430	153	51	634
	1915	5,401 82	5,284 87	15,125 32	5,773 20	524	162	53	739
Dundas	1913	3,045 85	4,193 27	3,070 40	60 10	377	134	27	538
	1914	5,349 24	4,198 64	4,305 96	3,050 85	520	153	30	703
	1915	6,139 97	4,310 96	5,930 54	3,460 35	613	160	37	810
Goderich	1914	7,197 05	4,196 49	1,240 73	5,525 00	400	155	10	565
	1915	6,072 51	5,066 76	5,645 26	5,525 00	441	168	8	617
Walkerville	1914	3,037 96	1,492 84	6,042 11	1,716 61	790	175	75	1,040
	1915	13,036 98	7,836 93	39,523 81	3,601 29	1,159	195	72	1,421
Paris	1914	4,766 23	2,778 09	1,419 90	4,103 00	354	142	1	497
	1915	5,071 54	4,063 03	6,328 33	4,576 00	477	150	4	631
Brampton	1912	3,004 66	2,893 74	3,531 34	3,500 00	409	104	12	525
	1913	5,617 61	3,986 65	10,557 72	3,500 00	643	138	16	797
	1914	6,798 89	4,055 99	10,658 33	4,200 00	627	174	21	822
	1915	6,860 48	4,053 56	11,624 83	4,486 00	691	174	21	886
Penetang	1912	1,676 26	3,836 30	2,207 51	1,962 00	101	87	13	201
	1913	1,989 80	4,511 16	8,775 95	2,042 00	128	91	15	234
	1914	1,936 73	3,064 83	8,001 69	2,016 00	153	100	15	268
	1915	2,050 69	2,676 60	10,048 08	2,095 00	174	102	15	291
St. Mary's	1912	4,967 16	4,039 20	6,001 30	3,449 50	240	143	20	403
	1913	3,815 77	4,553 73	8,221 72	3,582 00	396	160	29	588
	1914	4,614 95	4,733 33	10,610 05	3,441 00	454	161	30	645
	1915	5,073 97	4,222 53	8,379 87	3,850 00	528	151	33	712
Tillsonburg	1912	3,233 92	3,350 91	3,283 75	3,073 50	200	128	6	334
	1913	2,796 57	4,677 38	4,763 15	2,601 00	254	143	17	414
	1914	3,367 74	4,579 37	6,303 09	2,463 96	300	160	16	476
	1915	3,203 51	4,236 42	5,619 15	2,507 81	348	161	15	524
Prescott	1914	4,868 75	3,600 00	1,099 27	2,500 00	342	122	10	474
	1915	4,058 14	3,033 62	3,431 45	2,500 00	369	145	11	525
Hespeler	1913	2,189 00	1,684 75	5,044 30	1,500 00	174	76	11	261
	1914	2,635 41	1,934 75	6,116 27	1,478 00	229	85	13	327
	1915	2,787 48	2,334 15	9,017 58	1,536 00	272	90	14	376
Elmira	1914	1,968 41	2,020 81	1,876 49	1,680 00	158	65	8	231
	1915	2,059 11	1,674 44	2,801 33	1,680 00	185	85	10	280
Weston	1913	3,979 81	750 00	1,674 28	1,788 00	225	15	4	344
	1913	4,117 20	1,475 74	6,166 97	2,052 00	360	34	6	400
	1914	3,741 84	1,599 97	4,958 59	3,067 50	352	78	10	440
	1915	4,407 36	1,305 90	4,798 33	3,684 67	441	90	9	540

*Domestic and Commercial light not separated.

STATEMENT "D"—Continued

Report Showing Comparative Revenue and Number of Consumers in Municipalities in which Hydro Power has been in use for Two Years or More.

Municipality	Year	Revenue				Number of Consumers			
		Domestic Lt.	Commercial Lt.	Power	Street Lt.	Domestic	Commerc'l	Power	Total
Clinton	1914	2,023 70	2,028 08	1,255 33	1,105 66	179	111	7	297
	1915	2,930 57	3,068 63	2,018 24	1,630 40	204	110	6	320
Georgetown	1913	661 49	842 87	234 32	541 67	160	120	5	285
	1914	3,069 02	2,362 33	2,976 61	1,843 67	242	75	17	334
	1915	2,999 83	2,276 41	8,734 01	1,834 03	294	97	16	407
Mimico	1913	2,021 06	*	795 49	987 00	250	*	5	255
	1914	5,085 16	*	963 64	1,049 34	462	10	5	477
	1915	5,748 44	346 49	1,042 11	2,015 66	609	7	3	619
Milton	1913	1,149 28	1,212 26	6,462 38	900 00	110	74	5	189
	1914	1,961 22	2,226 80	11,325 61	1,350 00	150	79	6	235
	1915	1,981 80	1,900 98	5,364 29	1,575 00	170	80	7	257
Seaforth	1913	2,124 18	2,876 47	7,509 99	1,815 81	178	105	10	293
	1914	2,467 36	2,581 30	7,707 01	1,869 96	211	112	10	333
	1915	2,593 70	2,724 84	7,685 52	1,869 96	238	111	11	360
Acton	1913	1,236 50	1,567 48	318 77	1,000 00	82	62	3	147
	1914	1,463 72	1,496 18	836 13	1,563 00	146	58	5	209
	1915	1,931 11	1,725 73	1,019 27	1,555 00	183	53	5	241
Mitchell	1912	2,964 48	2,977 08	4,597 03	1,375 00	159	79	13	251
	1913	2,362 52	2,813 92	6,160 53	1,675 00	179	85	16	270
	1914	2,470 29	2,712 55	3,944 91	1,950 00	191	100	16	307
	1915	2,379 58	2,684 01	2,165 68	2,100 00	190	95	17	292
New Hamburg	1912	1,195 08	1,423 35	3,369 05	1,627 00	124	63	5	192
	1913	1,589 21	1,890 72	5,792 20	1,827 00	142	63	8	213
	1914	1,779 90	1,403 56	5,209 51	1,827 00	170	68	6	244
	1915	1,888 04	1,273 38	2,825 57	1,827 00	187	70	4	261
Pt. Dalhousie	1913	3,742 54	*	347 28	1,246 67	238	*	3	241
	1914	3,656 01	*	429 54	880 00	240	10	3	253
	1915	3,608 70	.....	252 12	968 00	250	10	2	262
Norwich	1912	862 17	674 48	263 93	591 00	128	64	2	194
	1913	1,926 78	1,162 98	1,978 55	1,285 50	166	76	3	245
	1914	2,168 13	995 16	1,893 72	1,197 00	198	84	3	285
	1915	2,529 91	1,075 79	2,169 31	1,126 00	228	80	5	313
Caledonia	1913	404 50	*	470 34	584 00	17	16	1	34
	1914	880 54	*	188 54	780 00	21	32	1	54
	1915	265 62	950 38	138 42	808 00	24	33	1	58
New Toronto	1914	653 50	.....	.....	600 00	100	4	1	105
	1915	1,416 10	.....	2,140 36	783 00	153	8	2	163
Hagersville	1913	81 92	*	746 85	300 00	3	24	3	30
	1914	1,222 23	*	2,679 08	1,200 00	70	60	3	133
	1915	1,172 85	1,592 59	2,434 62	1,200 00	114	73	3	190
Winchester	1914	1,672 09	1,300 00	.....	1,500 00	103	50	.....	153
	1915	1,698 40	1,336 85	.....	1,500 00	120	50	1	171
Stayner	1913	158 48	116 91	301 86	35 00	120	30	2	152
	1914	909 58	747 93	1,699 08	707 50	108	56	2	156
	1915	995 47	933 55	1,694 94	607 25	106	56	2	164
Pt. Credit	1913	1,963 22	*	848 59	696 00	93	21	2	116
	1914	2,461 42	*	309 88	810 00	125	35	2	162
	1915	1,975 29	587 11	256 47	1,000 00	141	33	3	177
Chesterville	1914	530 13	791 67	.....	465 00	68	35	.....	103
	1915	919 27	1,187 54	.....	689 00	85	49	.....	134
Pt. Stanley	1912	897 02	1,106 63	1,314 70	1,545 10	122	40	3	165
	1913	1,828 06	1,771 70	2,418 00	2,199 50	182	60	9	251
	1914	2,066 41	1,753 60	2,170 83	1,961 35	229	72	12	313
	1915	2,498 57	1,736 42	2,064 76	1,900 50	274	73	9	356
Waterdown	1912	774 40	340 00	614 42	375 83	41	20	2	63
	1913	1,003 09	361 20	917 65	435 00	70	34	2	106
	1914	1,054 13	535 83	1,011 38	510 00	71	34	5	110
	1915	1,202 41	567 65	1,207 80	580 00	84	30	7	121

STATEMENT "D"—Continued

Showing Comparative Revenue and Number of Consumers in Municipalities in which Hydro Power has been in use for Two Years or More.

Municipality	Year	Revenue				Consumers			
		Domestic Lt.	Commercial Lt.	Power	Street Lt.	Domestic	Commerc'l	Power	Total
		$ c.	$ c.	$ c.	$ c.				
Elmvale	1913	284 34	358 60	.....	302 00	52	52	1	105
	1914	673 18	896 11	438 38	624 00	57	48	2	107
	1915	704 12	778 93	1,186 44	624 00	78	64	2	144
Baden	1913	884 11	*	2,242 77	830 95	75	*	4	79
	1914	1,247 81	*	4,580 23	705 68	82	*	4	86
	1915	938 33	.....	4,588 87	580 06	72	.....	4	76
Rockwood	1913	230 27	*	480 82	196 00	48	9	1	58
	1914	848 55	*	1,542 01	549 50	54	7	3	64
	1915	731 97	251 27	907 57	507 50	65	10	3	78
Coldwater	1913	405 43	330 25	247 19	532 00	48	32	1	81
	1914	853 56	589 85	617 26	528 00	62	39	2	103
	1915	874 94	703 35	363 88	528 00	66	37	2	105
Creemore	1914	97 31	127 31	39 60	138 80	58	54	1	113
	1915	699 81	937 84	939 20	857 28	78	59	1	138
Beachville	1913	562 97	*	5,993 81	206 03	45	*	4	49
	1914	587 33	*	5,368 04	430 00	45	*	4	49
	1915	363 33	296 37	5,593 15	430 00	37	12	4	53
Thamesford	1914	393 49	323 92	946 32	372 16	44	26	2	72
	1915	574 34	481 78	423 21	469 00	59	26	2	87
Thorndale	1914	446 27	.....	329 27	294 00	34	18	1	53
	1915	299 37	374 09	542 53	294 00	32	20	1	53

*Domestic and Commercial light not separated.

STATEMENT "E"

Street Light Installation in Hydro Municipalities, December 31st, 1915, showing Cost per Year, Cost per Lamp, and Cost per Capita.

Municipality	Population	Number of Lamps	Size of Lamps	Cost per Lamp	Total Cost	Cost per Capita
				$ c.	$ c.	$ c.
Toronto	470,144	44,300	100-watt	8 00	350,085 97	74
Ottawa	101,785	413	100 "	10 00	56,813 66	56
		39	400 "	35 00		
		662	600 "	45 00		
		312 e	100 "	6 00		
		2,350	100 "	60c.ft.fro't'ge		
Hamilton	101,344	7,273	100 "	8 00	86,179 51	85
		788	250 "	13 75		
		401	500 "	50 00		
London	56,358	2,423	100 "	8 00 and 10 00	31,168 87	55
		497	100 "	12 85		
Brantford	26,389	2,848	100 "	8 00	28,691 05	1 09
		7	150 "	9 00		
		147 a	.....	40 00		
Windsor	22,993	280	500-watt	50 00	31,947 11	1 39
		1,743	100 "	12 00		
Peterboro'	20,653	146 b	500 "	50 00	12,294 64	59
		55 a	.....	50 50		
		350	60 "	9 00		
Berlin	19,056	10	500 "	.....	16,684 93	88
		1,966	100 "	9 00		
Port Arthur	18,324	2,373	.....	.....	16,726 46	91
St. Catharines	17,296	1,867	100-watt	8 00	11,579 42	67
Stratford	17,006	180	500 "	45 00	15,500 00	91
		737	100 "	10 00		
Guelph	16,799	1,103	100 "	9 00	9,298 95	55
St. Thomas	16,794	20 b	252 "	55 00	14,199 64	85
		113	500 "	40 00		
		981	75 "	10 00		
Chatham	12,714	649	100 "	12 00	7,613 36	d
		31	100 "	11 00		
		80	400 "	30 00		
		70	500 "	38 00		
Galt	12,060	800	100 "	8 00	12,981 29	1 08
		191	1 lt orna.	11 00		
		28	3 " "	17 50		
		22	4 " "	25 00		
		10	5 " "	22 00		
		77	500-watt	35 50		
Woodstock	10,265	50	250 "	25 00	7,810 08	76
		500	100 "	10 00		
		172	60 "	10 00		
Welland	7,243	102	250 "	18 00	5,235 75	72
		343	100 "	9 00		

STATEMENT "E"—Continued

Street Light Installation in Hydro Municipalities, December 31st, 1915, showing Cost per Year, Cost per Lamp, and Cost per Capita.

Municipality	Population	Number of Lamps	Size of Lamps	Cost per Lamp	Total Cost	Cost per Capita
				$ c.	$ c.	$ c.
Barrie	7,088	433	100-watt	12 00	5,075 00	72
Midland	6,375	14 b 257	500 '' 100 ''	40 00 10 00	3,100 00	49
Collingwood	6,361	394	70 ''	12 00	4,715 00	74
Ingersoll	5,200	149 176	60 '' 80 ''	11 00 11 50	3,564 80	69
Preston	4,942	47 207	200 '' 100 ''	12 00 11 00	2,830 50	57
Waterloo	4,908	420 14	100 '' 150 ''	8 75 10 50	5,773 20	1 18
Dundas	4,687	310	100 ''	9 00	2,790 00	60
Goderich	4,676	16–5 lt. 8–1 '' 8–1 '' 275	.... 100-watt	55 00 40 00 25 00 15 00	5,645 26	1 20
Walkerville	4,565	683	60 ''	r 5 60	s 8,111 46	1.78
Paris	4,383	6 404	250 '' 100 ''	27 50 11 00	4,576 00	1 04
Simcoe	4,160	....	100 '' 300 ''	14 00 38 00	2,708 51	f
Brampton	4,160	563	100 ''	8 00	4,486 00	1 08
Penetang	4,107	170	100 ''	12 00	2,095 00	51
Wallaceburg	4,107	167 28	100 '' 500 ''	13 50 30 00	2,680 61	k
St. Mary's	3,960	210 45	100 '' 250 ''	13 00 25 00	3,850 00	97
Tillsonburg	3,050	231	100 ''	11 00	2,507 81	82
Strathroy	2,899	251 31	80 '' 200 ''	15 00 24 00	4,221 76	1 46
Prescott	2,919	375	100 ''	.....	2,500 00	86
Hespeler	2,634	128	100 ''	12 00	1,536 00	58
Elmira	2,200	145	100 ''	12 00	1,680 00	76
Weston	2,186	210 8–5lt.	100 '' 100 ''	12 00 40 00	2,840 00	1 30
Clinton	2,115	132	60 ''	12 50	1,630 40	77
Georgetown	2,002	141	100 ''	12 00	1,692 00	85
Mimico	1,965	150	100 ''	11 00	1,650 00	84
Milton	1,942	178	100 ''	11 00	1,575 00	81
Seaforth	1,871	70 10 60	75 '' 75 '' 100 ''	12 00 13 00 15 00	1,869 96	100
Acton	1,803	108	100 ''	14 00	1,555 00	86
Tilbury	1,726	60	100 ''	17 00	715 00	g
Mitchell	1,706	154	100 ''	14 00	2,100 00	1 23

STATEMENT "E"—Continued

Street Light Installation in Hydro Municipalities, December 31st, 1915, showing Cost per Year Cost per Lamp, and Cost per Capita.

Municipality	Population	Number of Lamps	Size of Lamps	Cost per Lamp	Total Cost	Cost per Capita
				$ c.	$ c.	$ c.
New Hamburg ...	1,612	210	100 Watt	8 50	1,827 00	1 13
Fergus	1,605	126	100 "	12 50	1,744 75	1 09
Dresden	1,444	110	80 "	15 00	1,100 00	g
Pt. Dalhousie	1,318	87	100 "	12 00	968 00	73
Norwich.....	1,301	50 64	100 " 60 "	11 00 9 00	1,126 00	86
Elora	1,216	80	100 "	12 50	1,000 00	82
Caledonia	1,202	59	100 "	12 00	808 00	67
Victoria Harbor..	1,200	47	100 "	12 00	141 00	n
New Toronto.....	1,153	65	100 "	12 00	783 00	68
Waterford	1,134	85	100 "	14 00	892 50	f
Hagersville	1,091	100	100 "	12 00	1,200 00	1 10
Winchester	1,044	100	100 "	15 00	1,500 00	1 44
Beaverton	965	71	100 "	13 00	1,057 72	c
Stayner.....	950	43 15	50 " 100 "	9 00 12 00	607 25	64
Pt. Credit	944	91	100 "	11 00	1,000 00	1 06
Cannington	917	63	100 "	13 00	980 12	c
Ayr	910	.....	100 "	14 00	1,091 33	k
Dutton	890	95	100 "	15 50	364 23	h
Chesterville	885	53	100 "	13 00	689 00	78
Pt. Stanley	867	111 46 j	100 " 100 "	15 00	1,950 00	j
Waterdown	817	58	100 "	10 00	580 00	71
Elmvale	775	52	100 "	12 00	624 00	80
Lucan	720	35	100 "	15 00	812 60	q
Baden	710	58	100 "	10 00	580 00	82
Thamesville.....	708	68	100 "	15 00	255 00	h
Bothwell	707	74	100 "	15 00	219 25	h
Burford	700	44	100 "	13 00	279 48	t
Bolton	674	59	100 "	15 00	811 25	k
Woodbridge	651	73	100 "	13 00	960 00	1 47

STATEMENT "E"—Concluded

Street Light Installation in Hydro Municipalities, December, 31st, 1915 showing Cost per Year Cost per Lamp, and Cost per Capita.

Municipalities	Population	Number of Lamps	Size of Lamps	Cost per Lamp	Total Cost	Cost per Capita
				$ c.	$ c.	$ c.
Rockwood	650	40 5	100 Watt 40 "	12 00 12 00	507 50	78
Coldwater	614	44	100 "	12 00	528 00	89
Waubushene	600	29	100 "	12 00	377 00	m
St. George	600	33	100 "	15 00	202 50	n
Princeton	600	20	100 "	17 00	340 00	57
Creemore	582	54	100 "	16 00	857 28	1 47
Sunderland	570	21	100 "	13 00	323 82	e
Plattsville	550	32	100 "	16 00	498 00	91
Beachville	503	43	100 "	12 00	430 85	85
Brechin	under 500	9	100 "	13 00	117 00	.....
Comber	" "	36	100 "	16 50	448 37	f
Drumbo	" "	30	100 "	14 00	455 00	m
Delaware	" "	17	100 "	14 00	188 18	q
Dorchester	" "	23	100 "	14 00	85 72	h
Embro	" "	40	100 "	14 00	620 68	m
Lynden	" "	27	100 "	15 00	67 50	
Lambeth	" "	29	100 "	14 00	295 16	f
Mount Brydges	" "	31	100 "	14 00	449 66	f
Port McNicol	" "	27	100 "	12 00	351 00	m
Thamesford	" "	34	100 "	14 00	469 00	.....
Woodville	" "	32	100 "	13 00	507 60	e
Williamsburg	" "	16	100 "	13 00	156 00	f
Thorndale	" "	21	100 "	14 00	294 00	.....

NOTE:—

a Magnetite arcs
b Open arcs
c 14 months operation
d 7 months operation
e Installed by Dom. Gov't
f 9 months operation
g 8 " "
h 3 " "
j Summer service
k 11 months operation
m 13 " "
n 5 " "
p 2 " "
q 10 " "
r Does not include fixed charges
s Includes $5,442.35 fixed charges, levied direct
t 6 months operation

STATEMENT "F"

Cost per Kw-hr. of Domestic and Commercial Light, including Floor Space and Installed Capacity Charges; and Estimated Saving in 1915 to Hydro Light Users of Ontario Municipalities from Rate Reductions due to Hydro Service

Municipality	Service	Consumption Kw-hrs.	Total Cost	Old Rate Kw-hr.	Cost of Present Consumption at Old Rate	Saving in Year's Use	Total Saving	Net cost per Kw-hr. 1915	Net cost per Kw-hr. 1914
			$ c.		$ c.	$ c.	$ c.		
Toronto..	Dom.	8,599,559	331,807 18	8. +25c.	767,720 72	435,913 54	1,393,491 34	3.9	4.5
	Com.	10,243,496	291,907 92	12. +25c.	1,249,485 72	957,577 80		2.8	3.9
Ottawa...	Dom.	1,767,519	67,441 19	7.2 +8.33	154,101 36	66,660 17	129,121 59	3.8	5.0
	Com.	1,501,978	46,636 99	7.2 +8.33	109,098 41	62,461 42		3.1	4.9
Hamilton.	Dom.	2,514,104	92,207 60	8. +25c.	229,625 32	137,417 72	250,058 16	3.7	4.0
	Com.	1,840,920	34,633 16	8.	147,273 60	112,640 44		1.9	3.4
London...	Dom.	2,332,435	57,184 75	9. +25c.	230,355 15	173,170 40	263,359 67	2.4	4.8
	Com.	1,452,896	43,751 37	9. +25c.	133,940 64	90,189 27		3.0	3.
Brantford	Dom.	319,439	13,629 36	7.65 + 13.5	26,689 96	13,060 60	29,388 33	4.3	4.9
	Com.	347,349	10,746 67	7.65 + 13.5	27,074 40	16,327 73		3.1	3.5
Windsor..	Dom.	468,386	23,161 57	12.	56,206 32	33,044 75	35,815 32	4.9	....
	Com.	309,757	12,009 99	8.	24,780 56	12,770 57		3.9	....
Berlin....	Dom.	494,725	19,108 60	10.8 + 25c.	59,013 30	39,904 70	87,258 27	3.9	4.9
	Com.	579,303	16,807 15	10.8 + 25c.	64,160 72	47,353 57		2.9	3.5
St.Catharines ...	Dom.	273,389	9,540 70	7.	19,137 23	9,596 53	19,510 34	3.5	3.7
	Com.	196,056	3,810 11	7.	13,723 92	9,913 81		1.9	1.8
Stratford.	Dom.	388,200	16,967 58	12. - 25c.	51,273 00	34,305 42	68,925 99	4.4	5.5
	Com.	400,686	14,766 75	12. - 25c.	49,387 32	34,620 57		3.7	4.7
Guelph...	Dom.	366,928	15,514 10	8. - 15c.	32,419 64	16,905 54	40,040 64	4.2	5.9
	Com.	437,567	12,692 86	8. - 15c.	35,827 96	23,135 10		2.8	4.9
St.Thomas	Dom.	460,103	16,517 37	11.	39,611 33	23,093 96	65,186 17	3.6	4.8
	Com.	504,679	13,422 48	11.	55,514 69	42,092 21		2.7	3.9
Chatham .	Dom.	110,552	5,581 54	8. +25c.	10,344 16	4,762 62	8,800 21	5.5	....
	Com.	81,805	2,806 81	8. +25c.	6,844 40	4,037 59		3.4	....
Galt.....	Dom.	512,443	17,024 42	11.	56,368 73	39,344 31	69,136 63	3.3	5.3
	Com.	350,788	8,794 36	11.	38,586 68	29,792 32		2.3	4.1
Woodstock	Dom.	230,297	10,472 14	8. +20c.	20,881 36	10,589 22	29,453 23	4.5	5.2
	Com.	371,787	11,718 95	8. - 20c.	30,582 96	18,864 01		3.1	4.0
Welland. .	Dom.	154,534	4,643 16	8. - 25c.	13,802 72	9,159 56	13,270 97	3.0	3.7
	Com.	69,340	1,600 79	8. +25c.	5,712 20	4,111 41		2.3	2.6
Barrie....	Dom.	147,307	11,087 68	9.	13,257 63	2,169 95	8,527 04	7.1	7.3
	Com.	177,000	9,572 91	9.	15,930 00	6,357 09		5.4	6.8
Midland..	Dom.	199,257	6,580 45	8.5 - 15c.	18,115 84	11,535 39	15,670 95	3.3	5.5
	Com.	97,300	4,462 54	8.5 + 15c.	8,598 10	4,135 56		4.6	4.3
Collingwood ..	Dom.	118,336	7,094 27	10. +15c.	12,892 00	5,797 73	12,188 17	6.0	7.6
	Com.	116,583	5,688 26	10. +15c.	12,077 70	6,389 44		4.9	6.1
Ingersoll .	Dom.	102,537	5,480 52	8. +25c.	9,673 96	4,193 44	10,218 77	5.3	7.5
	Com.	139,428	5,716 91	8. +25c.	11,742 24	6,025 33		4.1	5.9
Preston ..	Dom.	129,896	6,615 91	10. +18c.	14,197 40	7,581 49	15,284 33	5.1	6.0
	Com.	118,756	4,488 76	10. +18c.	12,191 60	7,702 84		3.8	4.7
Waterloo.	Dom.	106,570	5,401 82	10.8 + 22.5	12,797 46	7,395 64	10,297 78	5.1	5.5
	Com.	107,821	5,284 87	7.2 + 22.5	8,187 01	2,902 14		4.9	5.0
Dundas...	Dom.	128,600	6,139 97	10. +25c.	14,558 00	8,418 03	28,253 62	4.8	5.8
	Com.	157,477	4,310 96	15. +25c.	24,146 55	19,835 59		2.7	3.5
Goderich .	Dom.	92,406	6,072 51	9.	8,316 54	2,244 03	8,117 58	6.6	8.6
	Com.	121,559	5,066 76	9.	10,940 31	5,873 55		4.1	5.3
Walkerville....	Dom.	241,771	13,036 98	15. 5	29,012 40	15,975 42	23,858 29	5.4	....
	Com.	157,198	7,836 93	15. 10 5	15,719 80	7,882 87		4.4	....
Paris.....	Dom.	87,239	5,071 54	7. +10c.	6,607 12	1,535 58	5,843 67	5.8	7.3
	Com.	100,259	4,063 03	8. +20c.	8,371 12	4,308 09		4.1	4.3
Brampton	Dom.	159,435	6,860 48	9. +15c.	15,535 35	8,674 87	15,439 04	4.3	4.9
	Com.	116,717	4,053 56	9. +15c.	10,817 73	6,764 17		3.5	4.0

STATEMENT "F"—Continued

Cost per Kw-hr. of Domestic and Commercial Light, including Floor Space and Installed Capacity Charges; and Estimated Saving in 1915 to Hydro Light Users of Ontario Municipalities from Rate Reductions due to Hydro Service

Municipality.	Service.	Consumption Kw-hrs.	Total Cost.	Old Rate Kw-hr.	Cost of Present Consumption at Old Rate	Saving in Year's Use	Total Saving	Net cost per Kw-hr. 1915	1914
			$ c.		$ c.	$ c.	$ c.		
Penetang	Dom.	42,843	2,050 69	10. +25c.	4,773 30	2,722 61	6,997 91	4.8	5.5
	Com.	66,489	2,676 60	10. +25c.	6,951 92	4,275 30		4.0	3.9
Wallaceburg	Dom.	56,482	4,079 74	11.	6,213 02	2,133 28	4,268 68	7.2	....
	Com.	63,747	4,239 30	10.	6,374 70	2,135 40		6.6	....
St. Mary's	Dom.	72,819	5,073 97	9. +15c.	7,435 71	2,361 74	5,237 97	6.9	6.7
	Com.	75,644	4,222 53	9. +15c.	7,098 76	2,876 23		5.5	6.3
Tillsonburg	Dom.	55,346	3,203 51	11. +25c.	7,060 06	3,856 55	7,422 17	5.7	7.3
	Com.	66,564	4,236 42	11. 25c.	7,802 04	3,565 62		6.3	5.9
Strathroy	Dom.	36,200	3,380 78	12. +25c.	5,043 00	1,652 22	3,447 74	9.3	....
	Com.	50,469	4,701 76	12. +25c.	6,497 28	1,795 52		9.3	....
Prescott	Dom.	67,130	4,058 14	9.	6,041 70	1,983 56	4,588 17	6.0	....
	Com.	62,647	3,033 62	9.	5,638 23	2,604 61		4.8	....
Hespeler	Dom.	39,580	2,787 48	10. 15c.	4,333 00	1,545 52	3,309 07	7.0	7.6
	Com.	39,657	2,334 15	10. 15c.	4,097 70	1,763 55		5.9	5.4
Elmira	Dom.	27,576	2,059 11	11.4 +10c.	3,351 06	1,291 95	6,797 86	7.5	9.5
	Com.	28,368	1,674 44	11.4 10c.	3,440 35	1,765 91		5.9	7.1
Weston	Dom.	96,186	4,407 36	7.2 22.5	7,995 39	3,588 03	4,493 77	4.6	4.7
	Com.	27,564	1,305 90	7.2 22.5	2,211 64	905 74		4.7	4.6
Clinton	Dom.	36,598	2,930 57	10. 25c.	4,235 80	1,235 97	2,520 74	8.2	9.4
	Com.	40,234	3,068 63	10. 25c.	4,353 40	1,284 77		7.6	8.2
Georgetown	Dom.	43,392	2,999 83	10. 10c.	4,660 80	1,660 97	2,030 36	6.9	7.2
	Com.	25,318	2,276 41	10. 10c.	2,645 80	369 39		8.9	8.0
Mimico	Dom.	105,884	5,748 44	8. 25c.	10,075 72	4,327 28	4,534 87	5.4	5.4
	Com.	6,551	346 49	8. 25c.	554 08	207 59		5.3	5.4
Milton	Dom.	28,900	1,981 80	10.	2,890 00	908 00	3,159 22	6.8	7.6
	Com.	41,520	1,900 98	10.	4,152 00	2,251 02		4.6	5.4
Seaforth	Dom.	43,162	2,593 70	8. 25c.	4,124 96	1,400 12	2,918 48	6.0	6.8
	Com.	48,840	2,724 84	8. 25c.	4,243 20	1,518 36		5.6	5.6
Acton	Dom.	29,079	1,931 11	10.	2,907 90	976 79	1,684 66	6.6	6.9
	Com.	24,336	1,725 73	10.	2,433 60	707 87		7.1	7.5
New Hamburg	Dom.	37,913	1,888 04	10.	3,791 30	1,903 26	2,933 98	4.9	7.7
	Com.	23,041	1,273 38	10.	2,304 10	1,030 72		5.5	7.2
Fergus	Dom.	19,328	1,314 03	10. 25c.	2,374 80	1,060 77	2,750 26	6.8	....
	Com.	37,844	2,367 91	10. 25c.	4,057 40	1,689 49		6.3	....
Norwich	Dom.	37,082	2,529 91	10. +15c.	4,291 60	1,761 69	3,421 50	6.8	5.4
	Com.	25,880	1,075 79	10. +15c.	2,735 60	1,659 81		4.2	6.4
Elora	Dom.	14,009	1,044 49	10. 25c.	1,625 90	581 41	.....	7.4	....
	Com.	25,431	1,820 07	10. 25c.	2,714 10	894 03	1,475 44	7.1	....
Simcoe*	Dom.	5,227	351 67	.....	.....	.....	.....	6.7	....
	Com.	26,852	1,386 89	.....	.....	.....	.....	5.1	....
Caledonia*	Dom.	5,618	265 62	.....	.....	.....	.....	4.7	5.2
	Com.	18,325	950 38	.....	.....	.....	.....	5.2	5.2
New Toronto*	Dom.	19,520	1,416 10	.....	.....	.....	.....	7.0	5.5
	Com.								
Waterford*	Dom.	7,972	685 22	.....	.....	.....	.....	8.6	....
	Com.	6,753	546 08	.....	.....	.....	.....	8.1	....
Hagersville*	Dom.	23,213	1,172 85	.....	.....	.....	.....	5.1	5.4
	Com.	22,676	1,592 59	.....	.....	.....	.....	5.2	5.4
Winchester*	Dom.	28,610	1,698 40	.....	.....	.....	.....	5.9	....
	Com.	17,550	1,336 85	.....	.....	.....	.....	7.6	....
Stayner	Dom.	11,845	995 47	.....	.....	.....	.....	8.4	9.9
	Com.	13,725	933 55	.....	.....	.....	.....	6.8	6.7

STATEMENT "F"—Concluded

Cost per Kw-hr. of Domestic and Commercial Light, including Floor Space and Installed Capacity Charges; and Estimated Saving in 1915 to Hydro Light Users of Ontario Municipalities from Rate Reductions due to Hydro Service

Municipality	Service	Consumption Kw-hr.	Total Cost	Old Rate Kw-hr.	Cost of Present Consumption at Old Rate	Saving in Year's Use	Total Saving	Net Cost per Kw-hr. 1915	Net Cost per Kw-hr. 1914
			$ c.	$ c.	$ c.	$ c.	$ c.		
Pt. Credit*	Dom.	36,484	1,975 29					5.4	6.0
	Com.	17,934	587 11					3.3	6.0
Ayr	Dom.	16,031	892 63					5.5	....
	Com.	9,477	773 08					8.1	....
Dutton	Dom.	3,970	318 85					8.0	....
	Com.	2,818	206 59					7.3	....
Chesterville*	Dom.	12,663	919 27					7.2	6.9
	Com.	12,104	1,187 54					9.8	7.7
Waterdown*	Dom.	18,017	1,202 41					6.7	7.9
	Com.	8,493	567 65					6.7	6.5
Elmvale*	Dom.	7,728	704 12					9.1	9.9
	Com.	20,193	778 93					3.9	5.8
Baden*	Dom.	12,729	938 33					7.4	10.0
	Com.								
Bolton	Dom.	6,563	624 86					9.5	....
	Com.	7,298	553 80					7.6	....
Woodbridge*	Dom.	4,878	367 49					7.5	....
	Com.	4,911	443 53					9.0	....
Rockwood*	Dom.	9,500	731 97					7.7	8.8
	Com.	3,300	251 27					7.7	8.8
Coldwater*	Dom.	16,706	874 94					5.3	6.8
	Com.	13,686	703 35					5.1	5.7
Waubaushene*	Dom.	7,296	516 34					7.0	....
	Com.	2,979	220 50					7.8	....
Creemore	Dom.	6,399	699 81					10.9	....
	Com.	7,653	937 84					12.2	....
Plattsville*	Dom.	6,061	551 39					9.1	....
	Com.	5,091	477 71					9.4	....
Beachville*	Dom.	5,356	363 33					6.8	7.9
	Com.	4,847	296 37					6.1	7.9
Comber*	Dom.	3,181	214 87					6.8	....
	Com.	3,497	274 49					7.8	....
Dorchester*	Dom.	6,840	579 23					8.5	....
	Com.	4,806	309 88					6.4	....
Lambeth*	Dom.	2,981	344 47					11.5	....
	Com.	1,042	119 00					11.4	....
Port McNicoll*	Dom.	6,037	415 03					6.8	....
	Com.	6,542	311 20					4.7	....
Thamesford*	Dom.	6,676	574 34					8.6	10.9
	Com.	5,886	481 78					8.2	9.4
Thorndale.*	Dom.	2,816	299 37					10.6	7.8
	Com.	3,653	374 09					10.2	7.8

* No service prior to Hydro.

STATEMENT "G"

Power Rates in Municipalities

| Municipalities | Note | Cost of Power to Municipality per HP per Year | | | | | 1912 — Flat Rates | | | | |

STATEMENT "H"

Lighting Rates in Municipalities

Municipality	1912 Domestic: Per 100 Sq. Ft.	1912 Domestic: Per Kw hr	1912 Commercial: 1st 30 Hr. per Kw hr.	1912 Commercial: Next 70 hr per Month per Kw hr.	1912 Commercial: All Additional per Kw hr.	1912 Prompt Payment Discount	1913 Domestic: Per 100 Sq. Ft.	1913 Domestic: Per Kw hr	1913 Commercial: 1st 30 Hr. per Month per Kw hr.	1913 Commercial: All Additional per 1st hr.	1913 Prompt Payment Discount	1914 Domestic: Per 100 Sq. Ft.	1914 Domestic: Per Kw hr	1914 Commercial: 1st 30 Hrs. per Kw hr.	1914 Commercial: All Additional per Kw hr.	1914 Prompt Payment Discount	1915 Domestic: Per 100 Sq. Ft.	1915 Domestic: Note A per Kw hr.	1915 Domestic: Note B per Kw hr.	1915 Commercial: 1st 30 Hr. per Kw hr.	1915 Commercial: Next 70 hr per Kw Hr	1915 Commercial: All Additional per Kw hr.	1915 Prompt Payment Discount	Suggested 1916 Domestic: Per 100 Sq. Ft.	Suggested 1916 Domestic: Note C per Kw hr.	Suggested 1916 Domestic: Note B per Kw hr.	Suggested 1916 Commercial: 1st 30 Hr. per Kw hr.	Suggested 1916 Commercial: Next 70 Hr. per Kw hr.	Suggested 1916 Commercial: All Additional per Kw hr.	Suggested 1916 Prompt Payment Discount
	¢	¢	¢	¢	¢	%	¢	¢	¢	¢	%	¢.	¢.	¢.	¢.	%	¢	¢.	¢.	¢.	¢.	¢.	%	¢.	¢.	¢.	¢.	¢.	¢.	%
Toronto ...	4	3	8	3	10-20	10-20	4	3	8	3	10-20	4	3	8	4	10-20	3	2.8	1.4	6	2.8	0.6	10	3	2	1	5	2.5	0.5	10
Hamilton	4	3	8	3	10	20	4	3	{6-1st 25 hr @ 4 {3-next 75hr @ 3	0.2	20	4	3	{6-1st 25 hr @ 4 {3-next 75 hr @ 3	0.2	20	3	2.5	1.25	5	1.5	0.15	10	3	2	1	4	1.5	0.15	10
Ottawa	Special Schedule						Special Schedule					4	2.5	6	2.5	20	3	2.2	1.1	5	2.2	0.5	10	3	2.2	1.1	5	2.2	0.5	10
London					10		5	3	5	3	10	4	3	6	3	25	3	2	1	5	2	0.5	10	3	2	1	5	2	0.5	10
Brantford												4	3	{6-1st 30 hr @ 4 {3-next 70hr @ 3	0.15	10	3	3	1.5	6	3	0.15	10	3	2.5	1.25	5	2.5	0.15	10
Windsor												3	4	2	8	4	0.8	10	3	4	2	8	4	0.8	10						
Peterboro												3	2.5	6	2.5	10	3	2.5	1.25	5	2.5	0.5	10	3	2.5	1.25	5	2.5	0.5	10
Berlin	4	4	12	5	10		4	4	8	4	10	4	4	8	4	25	3	2.5	1.25	5	2.5	0.5	10	3	2	1	5	2	0.5	10
Bridgeport ext	Berlin rate				10		Berlin rate				10	Berlin rate		10 %			Berlin rate		10 %					same as 1915						
Port Arthur	4	2.5	8	2.5	10		4	2.5	8	2.5	10	4	2.5	6	2.5	10	4	2.5	1	6	6	2.5	10	3	2	1	5	2	0.5	10
St. Thomas	5	5	12		10		4	4	8	4	10	4	2.5	6	2.5	20	3	2	1	5	2	0.5	10	3	2	1	5	2	0.5	10
Stratford	4	4	12	4	10		4	4	8	4	20	4	3	6	4	20	3	2.5	1.5	5	3	0.6	10	3	2.5	1.25	5	2.5	0.5	10
Sebringville ext							4	5	10	5	10	4	5	10	5	10	3	5	2.5	10	5	1	10	3	5	2.5	10	5	1	10	
Guelph	5	5	5	net			4	4	8	4	20	4	4	8	4	25	3	2.5	1.125	5	2.25	0.5	10	3	2	1	5	2	0.5	10
St. Catharines												4	3	{6-1st 30 hr @ 4 {3 next 70hr @ 3	0.6	25	3	2.25	1.125	5	2.25	0.15	10	3	2	1	5	2	0.15	10
Chatham ...																	3	3.5	1.75	7	3.5	1.7	10	3	3.5	1.75	7	3.5	0.7	10
Guelph	4	4	12	4	25		4	4	8	4	25	3	2.5	6	2.5	10	3	2	1	5	2	0.5	10	3	2	1	5	2	0.5	10
Woodstock	4	4	12	4	20		4	4	8	4	25	4	3	6	3	20	4	2.5	1.25	5	2.5	0.5	10	3	2	1	5	2	0.5	10
Barrie							4	4.5	9	4.5	10	4	4.5	9	4.5	10	3	4.5	2.25	9	4.5	0.9	10	3	4.5	2.25	9	4.5	0.9	10
Welland							4	3	6	3	25	4	3	6	3	25	3	2.25	1.125	5	2.25	0.15	10	3	2	1	5	2	0.15	10
Port Robinson ext							4	3	6	3	10	4	3	6	3	10	3	3	1.5	6	3	0.6	10	3	3	1.5	6	3	0.6	10
Collingwood							4	4	9	4	10	4	4.5	9	4.5	10	3	4	2	8	4	0.8	10	3	3.5	1.75	7	3.5	0.7	10
Midland	4	4	1	4	10		4	3	8	4	20	4	3	6	3	10	3	2.5	1.25	5	2.5	0.5	10	3	2.5	1.25	5	2.5	0.5	10
Ingersoll	10	10	10	10	10		4	4.5	9	4	10	4	4	8	4	10	3	3.5	1.75	7	3.5	0.7	10	3	3	1.5	6	3	0.6	10
Preston	4	4	12	4	10		4	4	8	4	10	4	4	8	4	20	3	3	1.5	6	3	0.5	10	3	2.5	1.25	5	2.5	0.5	10
Hespeler & Doon ext												4	4	8	4	20	3	3	1.5	6	3	0.5	10	3	3	2	8	4	0.8	10
Dundas	4	4	12	4	10		4	3	{6-1st 25 hr @ 4 {3-next 75hr @ 3	0.15	10	4	3	{6-1st 25 hr @ 4 {3-next 75hr @ 3	0.15	10	3	2.5	1.25	5	2.5	1.15	10	3	2.5	1.25	5	2.5	0.5	10
West Hamilton ext							4	4	8	4	10	4	4	8	4	10	3	4	2	8	4	0.8	10	3	4	2	8	4	0.8	10
Ancaster ext												4	5	10	5	10	3	5	2.5	10	5	1	10	3	5	2.5	10	5	1	10
Bullock's Corners ext																														10
Ancaster Township ext							4	4	8	4	10	4	4	8	4	10	4	4	4	8	4	4	10	3	4	2	8	4	0.8	10
Goderich							4	4.5	9	4.5	10	4	4.5	9	4.5	10	3	4.5	2.25	9	4.5	0.9	10	3	4.5	2.25	9	4.5	0.9	10
Waterloo	4	4	12	4	10		4	4	8	4	20	4	4	8	4	25	3	3	1.5	6	3	0.6	10	3	2	1	5	2	0.5	10
Waterville												3	4	{8-1st 30 hr @ 4 {4-next 70hr @ 3	0.8	10	3	4	2	8	4	0.8	10	3	4	2	8	4	0.8	10
Port Colborne ext																	3	4	2	8	4	0.8	10	3	4	2	8	4	0.8	10
Tecumseh ext																	3	5	2.5	10	5	1	10	3	5	2.5	10	5	1	10
Paris							4	3.5	7	3.5	10	4	3.5	7	3.5	10	3	3.5	1.75	7	3.5	0.7	10	3	3.5	1.75	7	3.5	0.7	10
Simcoe																	3	5	2.5	10	5	1	10	3	4.5	2.25	9	4.5	0.9	10
Petrolia	4	4	12	4	10		4	4	8	4	10	4	3	6	3	10	3	3	1.5	6	3	0.6	10	3	3	1.5	6	3	0.6	10
St. Mary's	4	4	12	4	10		4	4	8	4	10	4	3	10	5	10	3	4.5	2.25	9	4.5	0.9	10	3	3	1.5	6	3	0.6	10
Brighton	4	4	12	4	20		4	4	8	4	20	4	3	6	3	20	3	2.5	1.25	5	2.5	0.5	10	3	2	1	5	2	0.5	10
Wallaceburg																	3	5	2.5	10	5	1	10	3	5	2.5	10	5	1	10
Strathroy																	3	6	3	12	6	1.2	10	3	4	2	8	4	0.8	10
Tecumseh	4	4	12	5	10		4	5	10	5	10	4	4	8	4.5	10	3	3.5	1.75	7	3.5	0.7	10	3	3.5	1.75	7	3.5	0.7	10
Hespeler	4	4	10	10	10		4	4.5	9	4.5	10	4	4.5	9	4.5	10	3	4	2	8	4	0.8	10	3	3.5	1.75	7	3.5	0.7	10
Prescott							4	4	4	4	10	4	4	8	4	10	3	4	2	8	4	0.8	10	3	4	2	8	4	0.8	10
Woodstock	4	4	8	4	10		4	4	8	4	10	4	3	6	3	10	3	3	1.5	6	3	0.6	10	3	3	1.5	6	3	0.6	10
Sault Ste. Marie ext												4	4	8	4	10	4	4	2	8	4	0.8	10	4	4	2	8	4	0.8	10
Bracebridge												4	4	8	4	10	4	4	4	8	4	0.8	10	4	4	2	8	4	0.8	10
Cornwall												4	4	10	5	10	4	4	2.25	9	4.5	0.9	10	4	4	2	8	4	0.8	10
Milton							4	4	8	4	10	4	4	8	4	10	3	3.5	1.75	7	3.5	0.7	10	3	3.5	1.75	7	3.5	0.7	10
Georgetown							4	5	10	5	10	4	6	10	5	10	3	4	2	8	4	0.8	10	3	3.5	1.75	7	3.5	0.7	10
Port Williams ext												4	6	12	6	10	3	5	2.5	10	5	1	10	3	5	2.5	10	5	1	10
Seaforth	10	10	10	5 to 20			4	5	10	5	10	4	4	8	4	10	3	4	2	8	4	0.8	10	3	4	2	8	4	0.8	10
Meaford	4	4	12	4	10		4	4	9	4.5	10	4	4	8	4	10	3	3.5	1.75	7	3.5	0.7	10	3	3	1.5	6	3	0.6	10
Hespeler ext												4	5	10	5	10	3	5	2.5	10	5	1	10	3	5	2.5	10	5	1	10
Alliston												4	4	8	4	10	3	4	2	8	4	0.8	10	3	4	2	8	4	0.8	10
New Hamburg							4	5	10	5	10	4	4	8	4	10	3	3.5	1.75	7	3.5	0.7	10	3	3	1.5	6	3	0.6	10
Aylmer												4	5	10	5	10	3	5	2.5	10	5	1	10	3	5	2.5	10	5	1	10
Listowel																	3	5	2.5	10	5	1	10	3	5	2.5	10	5	1	10
Orangeville																	3	5	2.5	10	5	1	10	3	5	2.5	10	5	1	10
Penetanguishene												4	4	9	4.5	10	3	4.5	2.25	9	4.5	0.9	10	3	4	2	8	4	0.8	10
Napanee	4	4	12	4	10		4	4	8	4	15	4	4	8	4	15	3	3.5	1.75	7	3.5	0.7	10	3	3	1.5	6	3	0.6	10
Exeter							4	4.5	9	4.5	10	4	4.5	9	4.5	10	3	4.5	2.25	9	4.5	0.9	10	3	4	2	8	4	0.8	10
Port Dalhousie							4	4	6	5	10	4	4	6	5	10														
Port Colborne																	3	4	2	8	4	0.8	10	3	4	2	8	4	0.8	10
Caledonia	4	4	8	4	10		4	4	8	4	10	4	4	8	4	10	3	4	2	8	4	0.8	10	3	3.5	1.75	7	3.5	0.7	10
Chatham Township																	3	4.5	2.25	9	4.5	0.9	10	3	4.5	2.25	9	4.5	0.9	10
Winchester							4	4	8	4	10	4	4	8	4	10	3	4	2	8	4	0.8	10	3	4	2	8	4	0.8	10
St. Clair							4	4.5	9	4.5	10	4	4.5	9	4.5	10	3	4.5	2.25	9	4.5	0.9	10	3	4.5	2.25	9	4.5	0.9	10
Comber							4	4	8	4	10	4	4	8	4	10	3	4	2	8	4	0.8	10	3	4	2	8	4	0.8	10
Sandwich							4	4	8	4	10	4	4	8	4	10	3	4	2	8	4	0.8	10	3	3.5	1.75	7	3.5	0.7	10
Waterford																	3	5	2.5	10	5	1	10	3	5	2.5	10	5	1	10
Hagersville							4	4	9	4.5	10	4	4.5	9	4.5	10	3	4.5	2.25	9	4.5	0.9	10	3	4	2	8	4	0.8	10
Port Credit	4	4	8	4	10		4	4	8	4	10	4	4	8	4	10	3	3.5	1.75	7	3.5	0.7	10	3	3	1.5	6	3	0.6	10
Cainsington							4	4	8	4	10	4	4	8	4	10	3	4	2	8	4	0.8	10	3	4	2	8	4	0.8	10
Port Stanley	4	4	9	4.5	10		4	4.5	9	4.5	10	4	4.5	9	4.5	10	3	4.5	2.25	9	4.5	0.9	10	3	4	2	8	4	0.8	10
Chesterville							4	5	10	5	10	4	5	10	5	10	3	5	2.25	10	5	1	10	3	5	2.6	10	5	1	10
Wiarton							4	5	10	5	10	4	5	10	5	10	3	4.5	2.25	9	4.5	0.9	10	3	4	2	8	4	0.8	10
Ingersoll							4	4	9	4.5	10	4	4	9	4.5	10	3	4.5	2.25	9	4.5	0.9	10	3	4.5	2.25	9	4.5	0.9	10
St. Mary's ext																	3	4	2	8	4	0.8	10	3	3.5	1.75	7	3.5	0.7	10
Thessalon												4	5	12	6	10	3	6	3	12	6	1.2	10	3	6	3	12	6	1.2	10
Sunderland												4	6	12	6	10	3	6	3	12	6	1.2	10	3	6	3	12	6	1.2	10
Creemore												4	6	12	6	10	3	6	3	12	6	1.2	10	3	6	3	12	6	1.2	10
Beachville												4	7	14	7	10	3	7	3.5	14	7	1.4	10	3	7	3.5	14	7	1.4	10
Woodville												4	5	10	5	10	3	4.5	2.25	9	4.5	0.9	10	3	4	2	8	4	0.8	10
Rockwood												4	6	12	6	10	3	6	3	12	6	1.2	10	3	6	3	12	6	1.2	10
Coldwater												4	4	11	4.5	10	4	4.5	2.25	9	4.5	0.9	10	3	4	2	8	4	0.8	10
Thamesford												4	4	8	4	10	3	4	2	8	4	0.8	10	3	4	2	8	4	0.8	10
Thorndale												4	6	12	6	10	4	5	2.5	10	5	1	10	3	5	2.6	10	5	1	10
Aylmer																	4	6	3	12	6	1.2	10	3	5	2.6	10	5	1	10
Ilderton																	4	6	3	12	6	1.2	10	3	5	2.6	10	5	1	10
Lucan																	4	5	2.5	10	5	1	10	3	5	2.6	10	5	1	10
Strathroy																	4	5	2.5	10	5	1	10	3	5	2.6	10	5	1	10
Thamesville												4	6	12	6	10	4	6	3	12	6	1.2	10	3	6	3	12	6	1.2	10
Bothwell												4	7	14	7	10	4	7	3.5	14	7	1.4	10	3	7	3.5	14	7	1.4	10
Dutton												4	7.5	15	7.5	10	4	7.5	3.75	15	7.5	1.5	10	3	7.5	3.75	15	7.5	1.5	10
Ridgetown												4	5	10	5	10	4	5	2.5	10	5	1	10	3	5	2.5	10	5	1	10
Tilbury												4	5.5	11	5.5	10	4	5.5	2.75	11	5.5	1.1	10	3	5.5	2.75	11	5.5	1.1	10
Woodbridge																	4	4.5	2.25	9	4.5	0.9	10	3	4	2	8	4	0.8	10
Waubaushene																	4	4.5	2.25	9	4.5	0.9	10	3	4.5	2.25	9	4.5	0.9	10
St. Clair																	4	5	2.5	10	5	1	10	3	5	2.5	10	5	1	10
Princeton																	4	7	3.5	14	7	1.4	10	3	7	3.5	14	7	1.4	10
Lucan																	4	6	3	12	6	1.2	10	3	6	3	12	6	1.2	10
Brussels																	4	6	3	12	6	1.2	10	3	6	3	12	6	1.2	10
Campbell																	4	7	3.5	14	7	1.4	10	3	7	3.5	14	7	1.4	10
Prescott																	4	6	3	12	6	1.2	10	3	6	3	12	6	1.2	10
Delaware																	4	5.5	2.75	11	5.5	1.1	10	3	5.5	2.75	11	5.5	1.1	10
Dresden																	4	6	3	12	6	1.2	10	3	6	3	12	6	1.2	10
Ilderton																	4	6	3	12	6	1.2	10	3	6	3	12	6	1.2	10
Kemble																	4	5	2.5	10	5	1	10	3	5	2.5	10	5	1	10
Tavistock																	4	5.5	2.75	11	5.5	1.1	10	3	5.5	2.75	11	5.5	1.1	10
Lambeth																	4	4.5	2.25	9	4.5	0.9	10	3	4.5	2.25	9	4.5	0.9	10
Mount Brydges																	4	6	3	12	6	1.2	10	3	6	3	12	6	1.2	10
Port Mulgrave																	4	6	3	12	6	1.2	10	3	6	3	12	6	1.2	10
Williamsburg																	4	5	2.5	10	5	1	10	3	5	2.5	10	5	1	10

Note A [illegible] for the first 1000 sq. ft. and 3 kw hr for each additional 100 sq. ft. of floor area heated

Note B [illegible]

Note C [illegible]

MUNICIPAL ELECTRICAL INSPECTION

Electrical inspection throughout the Province of Ontario was, up to the last session of the Legislative Assembly of Ontario, carried on directly by the municipalities throughout the Province under the supervision of the Commission, requiring under such conditions, the appointment of inspectors by each municipality, such inspectors and other appointments being made by the municipal council in each case, subject to the approval of the Commission, and all such municipal inspection departments were, in turn, under the supervision of the Commission. Under this arrangement a considerable amount of time and expense was necessarily expended in the selection of inspectors, the passage of by-laws and other matters which had to be dealt with through the municipal councils. It also was very difficult to secure inspection in small surrounding municipalities, as it was necessary to bring about an understanding between each separate municipal council.

Under the old system there were some eighty municipalities under inspection, requiring almost as many inspectors. Many of these inspectors were local men holding positions in the electric light companies, all of which had to be corresponded with, called upon and otherwise kept under our supervision. During the session of 1915 a new Act was passed which empowered the Commission to take over the entire inspection system and appoint their own inspectors. Since then we have been able to carry on the work throughout the entire Province, with the exception of a few very remote sections, with less than fifty inspectors, and in place of eighty municipalities as before, we now have some 340 municipalities under careful and systematic inspection. The result of this arrangement is that the Commission is able to make such appointments as they deem advisable or necessary, and are also able to place any surrounding municipalities that can be reached from any one inspection district under the control of the nearest local inspector, and instead of the inspection fees being retained by the inspectors or the towns as was the case with the old system, all fees are now collected by the Commission. This has resulted very economically and satisfactorily.

In addition to the supervision of electrical inspection work, a system of approval of fittings and material has been instituted. Approval labels have been adopted in the case of new devices which have been manufactured to comply with the requirements of the Commission regarding protection of the public from fire or otherwise, which when affixed indicate to the general public and the inspectors in the different districts that such devices have been duly examined by the Commission and authority is thereby given to permit the use of such devices or material in installation work.

Appended hereto is a schedule showing the Inspection Districts throughout the Province. In the schedule is shown the name of the district in which an inspector has been appointed and the various municipalities and districts which are taken care of by the District Inspector thereof.

Under the present arrangement all inspectors are directly responsible to the Commission, to whom all matters pertaining to the interpretation of rules, all disputes between themselves, wire contractors and others, and the general manner of conducting their various districts, are referred to the Commission, tending to create a uniform interpretation of the Rules and Regulations and enabling the Commission to keep a more accurate and close supervision over their work.

The Rules and Regulations of the Commission have been carefully prepared and amended in such a way as to keep well in touch with changes and innovations in the way of electrical construction and all such demands and the general supervision of the Department have been promptly met and carefully supervised during the past year.

Inspection Districts

No.	District.	Towns in District.
1.	Windsor	Walkerville, Ford, Gordon, Tecumseh, Sandwich, Essex, Ojibway, Canard River, Maidstone, Amherstburg, Harrow, Kingsville, Cottam, Ruthven, Leamington, Wheatley, Stoney Point and Belle River.
2.	Chatham	Wallaceburg, Dresden, Comber, Tilbury, Blenheim, Ridgetown, Thamesville, Bothwell and Glencoe.
3.	Sarnia	Courtright, Oil Springs, Wyoming, Thedford, Forest, Alvinston, Arkona, Petrolia, Brigden and Pt. Edward.
4.	St. Thomas	Aylmer, Dutton, Pt. Stanley and Tillsonburg.
5.	London	Lambeth, Delaware, Komoka, Mt. Brydges, Strathroy, Ailsa Craig, Lucan, Byron, Thamesford, Westminster Gardens, Springbank, Broughdale, Thorndale, Dorchester, Belmont and Exeter.
6.	Woodstock	Beachville, Ingersoll, Embro, Ayr, Princeton and Drumbo.
7.	Brantford	Paris, Burford, St. George, Lynden and Plattsville.
8.	Hamilton	Burlington, Port Nelson, Clappison's Cor., Dundas, Aldershot, Waterdown, West Flamboro, Greensville, Grimsby, Beamsville, Bartonville, Ancaster, Chedoke, Winona, Stoney Creek, Grimsby Beach, Vineland, Freeman's Cor. and North Grimsby.
9.	St. Catharines	Port Weller, Niagara-on-the-Lake, Port Dalhousie, Grantham Twp., Thorold, Merritton, Allenburg Vic., Louth Twp., Fonthill, Ridgeville, Fenwick, Electric Park, Port Colborne, Jordan, Jordan Station, Decew Falls.
10.	Toronto	Mt. Denis, Weston, Woodbridge, Lambton, Cooksville, Clarkson, Streetsville, Swansea, Mimico, New Toronto, Long Branch, Lorne Park, Port Credit, Agincourt.
11.	Guelph	Rockwood, Acton, Fergus, Elora and Elmira.
12.	Berlin	Waterloo, Preston, Galt, Baden, Hespeler, Breslau and Bridgeport.
13.	Stratford	Shakespeare, New Hamburg, Clinton, Tavistock, St. Mary's, Mitchell, Sebringville, Seaforth, Egmonville, Goderich, Milverton.

No.	District.	Towns in District.
14.	Aurora	Barrie, Allandale, Orillia, Coldwater, Waubaushene, Victoria Harbor, Port McNichol, Midland, Penetang, Elmvale, Richmond Hill, Thornhill, Newmarket, Sutton, Roaches Pt., Orchard Beach, Keswick, Sharon and Queensville.
15.	Peterboro	Lindsay, Omemee, Millbrook, Hastings, Norwood, Havelock, Lakefield.
16.	Belleville	Trenton, Brighton, Colborne, Cobourg, Cannifton, Corbyville, Madoc, Stirling, Hoard's Station, Campbellford, Frankford, Wellington, Picton, Marmora, Port Hope.
17.	Kingston	Kingston Junc., Findley, Tweed, Gananoque, Collins' Bay, Napanee, Deseronto, Newburgh, Strathcona, Camden Eeast, Yarker, Tamworth, Marlbank, Larkins, Stocco, Sydenham, Portsmouth, Barriefield.
18.	Simcoe	Waterford, Pt. Dover, Jarvis, Hagersville, Caledonia, Delhi, Tillsonburg, Norwich, Otterville.
19.	Brockville	Prescott, Cardinal, Iroquois, Morrisburg, Cornwall, Perth, Chesterville, Winchester, Kemptville, Merrickville, Smith's Falls, Williamsburg, Westport, Aultsville, Farran's Point, Wales, Moulinette, Mille Roches, Lynedoch, Delta.
20.	Ottawa	Almonte, Carleton Place, Eganville, Pembroke, Arnprior, Renfrew.
21.	Cobalt	
22.	Niagara Falls	St. David's, Stamford, Port Robinson, Welland, Crowland, Bridgeburg, Ft. Erie, Ridgeway, Crystal Beach, Erie Beach, Crescent Beach, Thunder Bay or Prospect Bay.
23.	Palmerston	Durham, Dundalk, Shelburne, Markdale, Flesherton, Mildmay, Chatsworth, Chesley, Hanover, Walkerton, Harriston, Listowel, Mt. Forest.
24.	Thunder Bay	Port Arthur and Fort William.
25.	Oshawa	Oshawa and vicinity.
26.	Collingwood	Meaford, Thornbury, Stayner, Creemore, Clarksburg.
27.	Cannington	Beaverton, Sunderland, Uxbridge, Stouffville, Markham, Woodville and Brechen.
28.	Brampton	Brampton and Georgetown.
29.	Bobcaygeon	Bobcaygeon and surrounding township.

MUNICIPAL RATES

The rate schedules adopted for this year by the municipalities contained certain changes in those for Domestic and Commercial service.

Domestic Service

The service rate was reduced from 4 cents per month per 100 square feet of floor area, to 3 cents.

Instead of the minimum service charge of 25 cents per month net, for all municipalities, it was made to vary with the size of the municipality, and was stated as based on certain amounts of floor area, being:—

In cities and towns, 1,000 square feet, or 30 cents per month.
In villages and police villages, 1,200 square feet, or 36 cents per month, and
In suburban districts, 1,500 square feet, or 45 cents per month.

A maximum service charge was adopted by all municipalities, being based on 3,000 square feet of floor area.

Formerly there was only one consumption or kilowatt hour rate for Domestic service. This year saw the inauguration of a second or follow-up rate for this class of service, being one-half of the first consumption rate. The first consumption rate corresponds to that formerly used for all energy taken. The application of these two rates is as follows:—

The first rate applies to all consumption up to 40 kilowatt hours per month for the first 1,000 square feet, plus 3 kilowatt hours for each additional 100 square feet of floor area charged, and
The second rate, to all remaining consumption.
All municipalities use a prompt payment discount of 10 per cent.

It is contemplated that at the beginning of the next municipal year, a further change will be made in the application of the two domestic consumption rates; that they be used in the following manner:—

The first rate is to apply to all consumption up to 3 kilowatt hours per month per 100 square feet of floor area charged, and
The second rate, to all remaining consumption.

Commercial Service

The former rate schedules for this class of service consisted of two consumption or kilowatt hour rates, the first applying to all energy taken up to the first 30 hours monthly use of the installed capacity, and the second to all remaining consumption. A third or follow-up rate was adopted, applying to all consumption remaining over 100 hours use per month of the installed capacity, making the second rate applicable only to that consumption between 30 and 100 hours monthly use. The first rate remains as in the former schedules.

The rate schedules for Commercial service, then, consist of three consumption or kilowatt hour rates used in the following manner:—

The first rate applies to all consumption up to the first 30 hours monthly use of the installed capacity.

The second, to all additional consumption up to the next 70 hours monthly use, and

The third, to all remaining consumption.

A prompt payment discount of 10 per cent. is deducted in all municipalities.

There are no changes contemplated in the form of the rate schedules for commercial service for the coming year.

Power and Street Lighting Service

The systems of charge for Power service and for Street Lighting have retained the same forms as described in previous reports.

The following changes will be embodied in the power rate schedules for 1916:—

The present power rate schedules have consumption rates holding approximately the same ratio for any cost of power. With this form there are comparatively high rates for the consumption in excess of 100 hours use per month where the cost of power is high. The result of this is that after the consumption has exceeded 100 hours use per month, the total bill per horse power continues to increase at a comparatively high rate, making the bills of consumers having high load factors prohibitive. To overcome this difficulty, the third consumption rate will not exceed 0.15 cents per kilowatt hour. With the schedules revised in this manner, the increase in the consumers' bills after the consumption has passed 100 hours use per month will be at a very slow rate, and the total bill cannot become excessive.

It will be noted that in some of the power rate schedules as high as 25 per cent. is deducted as prompt payment discount. Should a consumer neglect to pay his bill on time, the amount deducted is recharged. In such cases the penalty is much too great. It has, therefore, been deemed advisable to adjust the rate schedules to use a 10 per cent. prompt payment discount in all cases. In municipalities where a greater discount is necessary, two discounts will be used, the first being a local discount, and the second of 10 per cent. for prompt payment. The local discount will be made so that with it and that for prompt payment the desired reduction from the base rate will be obtained. Only the prompt payment discount will be recharged when the consumer neglects to pay his bill on time.

A revised edition of the "Standard Interpretations of Rates" has been drawn up. These will be published and circulated among the municipalities in the near future.

Municipal Rates

1915

Municipality	Cost of Power to Municipality per H.P. per Year	Lighting Rates							Power Rates					Street Lighting
		Domestic		Commercial				Prompt payment discount	Per H.P. per month	1st 50 hr. per month per Kw-hr.	2nd 50 hr. per month per Kw-hr.	All Additional per Kw-hr.	Prompt payment discount	
		Per 100 sq. ft.	Per Kw-hr. (See note a)	Per Kw-hr. (See note b)	1st 30 hr. per Kw-hr.	Next 70 hr. per Kw-hr.	All add'l per Kw-hr.							
	$ c.	c.	c.	c.	c.	c.	c.	%	$ c.	c.	c.	c.	%	$ c.
Acton	36 00	3	5	2.5	10	5	1	10	1 00	4.3	2.9	0.4	10	14.00 per 100-w. Incan.
Ancaster	Served by Dundas	3	5	2.5	10	5	1	10	1 00	3	2	0.25	10	14.00 " "
Ayr	37 40	3	5	2.5	10	5	1	10	1 00	4.5	3	0.4	10	14.00 " "
Baden	32 00	3	4	2	8	4	0.8	10	1 00	3.8	2.5	0.3	10	10.00 " "
Barrie	33 70	3	4.5	2.25	9	4.5	0.9	10	1 00	3.6	2.4	0.3	10	12.00 " "
Beachville	31 00	3	4.5	2.25	9	4.5	0.9	10	1 00	2.5	1.7	0.2	10	12.00 " "
Beaverton	66 17	3	4	2	8	4	0.8	10	1 00	3.6	2.4	0.3	10	13.00 " "
Berlin	21 50	3	2.5	1.25	5	2.5	0.5	10	1 00	2.1	1.4	0.2	10	9.00 " "
Blair	Served by Preston	3	4	4				10						
Bolton	43 00	3	5.5	2.75	11	5.5	1.1	10	1 00	4.9	3.3	0.4	10	15.00 " "
Bothwell	59 25	3	7.5	3.75	15	7.5	1.5	10	.....	.....	.....	.....	.....	15.50 " "
Brampton	25 00	3	2.5	1.25	5	2.5	0.5	10	1 00	2.8	1.8	0.2	10	8.00 " "
Brantford	19 50	3	3	1.5	6	3	0.15	10	1 00	1.9	1.3	0.15	10	8.00 " " 9.00 150-w Incan 40.00 Magnetite Arc.
Brechin	56 79	3	6	3	12	6	1.2	10	1 00	4.5	3	0.3	10	13.00 100-w. Incan.
Breslau		3	6	3	12	6	1.2	10						
Bridgeport	Served by Berlin	Berlin rates plus 10%.							1 00	2.8	1.8	0.2	10	9.90 per 100-w. Incan.
Bullock's Corn. and Greensville	Served by Dundas	4	4	4	8	4	4	10	1 00	2.8	1.8	0.25	10	12.00 100-w. "
Burford	37 50	3	5	2.5	10	5	1	10	1 00	4.2	2.8	0.3	10	13.00 " "
Caledonia	24 00	3	4	2	8	4	0.8	10	1 00	3.7	2.5	0.3	10	12.00 " "
Cannington	65 77	3	4	2	8	4	0.8	10	1 00	3.6	2.4	0.3	10	13.00 " "
Chatham	30 78	3	3.5	1.75	7	3.5	0.7	10	1 00	3.2	2.1	0.25	10	12.00 " " 11.00 " Incan. on Stan* 30.00 400-w. " " * 38.00 500-w. " " *

Chesterville...	43 29	3	5	2.5	10	5	1	10	1 00	4.2	2.8	0.3	10	13.00	100-w. Incan.
Clinton.....	39 00	3	5	2.5	10	5	1	10	1 00	4.9	3.3	0.4	10	12.50	60-c.p. "
Coldwater....	28 00	3	4	2	8	4	0.8	10	1 00	3.2	2.1	0.3	10	12.00	100-w. "
Collingwood ..	33 97	3	4	2	8	4	0.8	10	1 00	3.6	2.4	0.3	10	12.00	" "
Comber.....	56 22	3	7	3.5	14	7	1.4	10	.....	.....	.....	.....	.....	16.50	" "
Creemore.....	54 13	3	7	3.5	14	7	1.4	10	1 00	6.4	4.3	0.5	10	16.00	" "
Delaware	46 56	3	6	3	12	6	1.2	10	1 00	5.4	3.6	0.4	10	14.00	" "
Dorchester....	45 00	3	6	3	12	6	1.2	10	1 00	5.6	3.8	0.5	10	14.00	" "
Dresden	43 00	3	5	2.5	10	5	1	10	1 00	4.9	3.3	0.4	10	15.00	" "
Drumbo	40 73	3	5	2.5	10	5	1	10	1 00	4.9	3.3	0.4	10	14.00	" "
Dundas.....	15 00	3	2.5	1.25	5	2.5	0.5	10	1 00	1.6	1.1	0.15	15	9.00	" "
Dutton	43 53	3	5.5	2.75	11	5.5	1.1	10	1 00	4.2	2.8	0.3	10	15.50	" "
Elmira	38 00	3	4.5	2.25	9	4.5	0.9	10	1 00	4.7	3.1	0.4	10	12.00	" "
Elmvale.....	31 00	3	4.5	2.25	9	4.5	0.9	10	1 00	3.6	2.4	0.3	10	12.00	" "
Elora	33 97	3	4.5	2.25	9	4.5	0.9	10	1 00	3.9	2.6	0.3	10	12.50	" "
Embro	39 85	3	5.5	2.75	11	5.5	1.1	10	1 00	4.9	3.3	0.4	10	14.00	" "
Fergus	33 97	3	4.5	2.25	9	4.5	0.9	10	1 00	3.9	2.6	0.3	10	12.50	" "
Ford City.....	Served by Walkerv'le	3	4	2	8	4	0.8	10	1 00	3.6	2.4	0.3	10	12.00	" " *
Galt.....	21 50	3	2	1	5	2	0.5	10	1 00	1.9	1.3	0.15	25	8.00 11.00 17.50 25.00 22.00 20.50 35.50 28.50	75w. " 100w. " on Standard* 1-100w. & 2-60w. Incan. on Stand.* 4-100w. Incan. on Standard* 1-100w. & 4-60w. Incan. on Stand.* 5-60w. Incan. on Standard* 1-500w. Incan. on Standard* 1-300w. Incan. on Standard.*
Georgetown ..	36 00	3	4	2	8	4	0.8	10	1 00	3.5	2.3	0.3	10	12.00	100-w. Incan.
Glen Williams	Served by Georgeto'n	3	5	2.5	10	5	1	10	1 00	4.3	2.9	0.4	10	12.50 15.00 55.00	" " " " 1-250w. & 2-100w. Incan. on Stand.
Goderich	37 00	3	4.5	2.25	9	4.5	0.9	10	1 00	4.8	3.2	0.4	10	40.00 25.00	1-250w. Incan. on Standard 1-100w. Incan. on Standard

Municipal Rates—Continued

1915

Municipality	Cost of Power to Municipality per H.P. per year	Lighting Rates							Power Rates					Street Lighting
		Domestic			Commercial			Prompt payment discount	Per H.P. per month	1st 50 Hr. per month Kw-hr.	2nd 50 hr. per month per Kw-hr.	All additional per Kw-hr.	Prompt payment discount	
		Per 100 sq.ft.	Per Kw-hr. (See note a)	Per Kw-hr. (See note b)	1st 30 hr. per Kw-hr.	Next 70 hr. per Kw-hr.	All add'l per Kw-hr.							
	$ c.	c.	c.	c.	c.	c.	c.	%	$ c.	c.	c.	c.	%	
Guelph	21 00	3	2.25	1.125	5	2.25	0.5	10	1 00	2.0	1.5	0.2	25 and 10	9.00 per 100-w. Incan.
Hagersville	33 21	3	4.5	2.25	9	4.5	0.9	10	1 00	3.9	2.6	0.3	10	12.00 " "
Hamilton	15 00	3	2.5	1.25	5	1.5	0.15	10	1 00	1.6	1.0	0.15	25 and 10	8.00 " " 13.75 250-w. " 50.00 500-w. Inc. on Stan.
Hespeler	23 00	3	4	2	8	4	0.8	10	1 00	3.0	2.0	0.25	10	12.00 100-w. Incan.
Humber Bay	Served by Mimico	3	5	2.5	10	5	1	10	1 00	3.6	2.4	0.3	10	16.00 " "
Ingersoll	25 50	3	3.5	2.75	7	3.5	0.7	10	1 00	2.8	1.8	0.2	10 and 10	11.50 " " 11.00 80-w. "
Lambeth	46 56	3	6	3	12	6	1.2	10	1 00	5.4	3.6	0.4	10	14.00 " "
London	23 00	3	2	1	5	2	0.5	10	1 00	2.5	1.7	0.2	10 and 10	11.00 75-w. " 11.85 100-w. Inc. on Stan.*
Lucan	47 74	3	6	3	12	6	1.2	10	1 00	5.4	3.6	0.4	10	15.00 100-w Incan.
Midland	19 37	3	2.5	1.25	5	2.5	0.5	10	1 00	1.7	1.1	0.17	10	10.00 " " 40.00 750-w. "
Milton	28 00	3	3.5	1.75	7	3.5	0.7	10	1 00	2.5	1.7	0.2	10	11.00 100-w. "
Mimico	28 00	3	3.5	1.75	7	3.5	0.7	10	1 00	3.3	2.2	0.3	10	11.00 " "
Mitchell	37 00	3	4	2	8	4	0.8	10	1 00	4.2	2.8	0.3	10	14.00 " "
Mount Brydges	46 56	3	6	3	12	6	1.2	10	1 00	5.4	3.6	0.4	10	14.00 " "
New Hamburg	32 00	3	3.5	1.75	7	3.5	0.7	10	1 00	3.8	2.5	0.3	10 and 10	9.00 " "
New Toronto	28 00	3	4	2	8	4	0.8	10	1 00	3	2	0.25	10	12.00 " "
Norwich	32 00	3	3.5	1.75	7	3.5	0.7	10	1 00	3	2	0.25	10	11.00 " " 9.00 60-w. "
Ottawa	14 00	3	2.2	1.1	5	2.2	0.5	10	1 00	1.8	1.2	0.15	15 & 10	10.00 100-w. " 45.00 Arc
Paris	21 00	3	3.5	1.75	7	3.5	0.7	10	1 00	2.5	1.7	0.2	10	11.00 100-w. "
Penetang	26 50	3	3	1.5	6	3	0.6	10	1 00	1.7	1.1	0.15	10	12.00 " "

Peterboro'	18 00	3	2.5	1.25	5	2.5	0.5	10	1 00	1.3	0.8	0.1	10 & 10	9.00	" "
														50.00	Arc
														50.50	Arc on Stand.
Petersburg and St. Agatha..		3	6	3	12	6	1.2	10	1 00	5.1	3.4	0.4	10		
Plattsville....	49 27	3	6	3	12	6	1.2	10	1 00	6.2	4.1	0.5	10	16.00	100-w. Incan.
Port Arthur..	22 71	4	2.5	1.5	6	6	2.5	10	1 00	2	1.3	0.15	10	5.00	60-w. "
														8.30	100-w. "
Port Credit...	28 00	3	3.5	1.75	7	3.5	0.7	10	1 00	3	2	0.25	10	11.00	" "
Port Dalhousie	22 49	3	4	2	8	4	0.8	10	1 00	2.1	1.4	0.2	10	10.00	" "
P't McNicoll	35 00	3	4.5	2.25	9	4.5	0.9	10	1 00	3.6	2.4	0.3	10	12.00	" "
Port Robinson	Served by Welland	3	3	1.5	6	3	0.6	10	1 00	1.8	1.2	0.15	10	11.00	" "
Port Stanley..	50 90	3	4.5	2.25	9	4.5	0.9	10	1 00	5	3	0.4	10	15.00	" "
Prescott.....	28 67	3	4	2	8	4	0.8	10	1 00	2.8	1.8	0.2	10		
Preston.....	21 00	3	3	1.5	6	3	0.6	10	1 00	2.3	1.6	0.2	20 & 10	11.00	60-w. "
														12.00	100-w. "
Princeton.....	65 95	3	7	3.5	14	7	1.4	10	1 00	7.8	5.2	0.6	10	17.00	" "
Rockwood	38 00	3	4.5	2.25	9	4.5	0.9	10	1 00	4.7	3.1	0.4	10 & 10	12.00	" "
Seaforth	40 00	3	4	2	8	4	0.8	10	1 00	4.3	2.9	0.4	10	15.00	" "
														12.00	75-w. "
Sebringville ..	Served by Stratford	3	5	2.5	10	5	1	10	1 00	5.4	3.6	0.4	10		
Simcoe	35 00	3	5	2.5	10	5	1	10	1 00	4.2	2.8	0.3	10	14.00	" "
														38.00	300-w. " on Standard
St. Catharines	14 23	3	2.25	1.125	5	2.25	0.15	10	1 00	1.8	1.2	0.15	25	8.00	100-w. Incan.
St. George....	38 78	3	5	2.5	10	5	1	10	1 00	4.2	2.8	0.3	10	15.00	" "
St. Mary's....	29 50	3	4.5	2.25	9	4.5	0.9	10	1 00	3.6	2.4	0.3	10	13.00	" "
														25.00	250-w. "
St. Thomas...	28 00	3	2	1	5	2	0.5	10	1 00	2.5	1.7	0.2	10 & 10	9.00	50-w. "
														10.00	75-w. "
														40.00	500-w. "
														55.00	Arc.
Stayner	37 82	3	4.5	2.25	9	4.5	0.9	10	1 00	4.2	2.8	0.3	10	12.00	100-w. "
														9.00	60-w. "
Stratford	30 00	3	3	1.5	6	3	0.6	10	1 00	3.3	2.2	0.3	10	10.00	75-w. "
														40.00	500-w. "
														45.00	500-w. "
														50.00	500-w. " on Standard
Strathroy.....	44 07	3	6	3	12	6	1.2	10	1 00	3.8	2.6	0.3	10	15.00	100-w. Incan.
														24.00	175-w. "
Sunderland...	82 68	3	6	3	12	6	1.2	10	1 00	4.5	3.0	0.4	10	13.00	100-w. "

Municipal Rates.—Continued.

1915

Municipality	Cost of Power to Municipality per H.P. per Year	Lighting Rates: Domestic: Per 100 sq. ft.	Lighting Rates: Domestic: Per Kw-hr. (See note a)	Lighting Rates: Domestic: Per Kw-hr. (See note b)	Lighting Rates: Commercial: 1st 30 hr. per Kw. hr.	Lighting Rates: Commercial: Next 70 hr. per Kw-hr.	Lighting Rates: Commercial: All add'l per Kw-hr.	Lighting Rates: Prompt payment discount	Power Rates: Per H.P. per month	Power Rates: 1st 50 hr. per month per Kw-hr.	Power Rates: 2nd 50 hr. per month per Kw-hr.	Power Rates: All additional per Kw-hr.	Power Rates: Prompt payment discount	Street Lighting	
	$ c.	c.	c.	c.	c.	c.	c.	%	$ c.	c.	c.	c.	%	$ c.	
Tecumseh	Served by Walkerville	3	5	5	10	5	5	10	.....	.....	.....	.....	.....	12.00	100-w. Incan.
Thamesford ..	45 00	3	5	2.5	10	5	1	10	1 00	5.6	3.8	0.5	10	14.00	
Thamesville ..	45 40	3	6	3	12	6	1.2	10	.....	.....	.....	.....	.....	.....	
Thorndale....	45 00	3	6	3	12	6	1.2	10	1 00	5.6	3.8	0.5	10	14.00	" "
Tilbury.....	39 45	3	5	2.5	10	5	1	10	1 00	4.5	3.0	0.4	10	17.00	" "
Tillsonburg...	32 00	3	3.5	1.75	7	3.5	0.7	10	1 00	3.8	2.5	0.3	10	11.00	" "
Toronto	15 00	3	2.8	1.4	6	2.8	0.6	10	1.35 1st 10h.p. 1.00 all add'l	1.5	1	0.15	20	8.00	" "
Victoria Harbor	35 00	3	4.5	2.25	9	4.5	0.9	10	1 00	3.9	2.6	0.3	10	12.00	" "
Walkerville...	38 00	3	4	2	8	4	0.8	10	1 00	3.6	2.4	0.3	10	5.60	" "
Wallaceburg ..	38 45	3	5	2.5	10	5	1	10	1 00	4.2	2.8	0.3	10	13.50 30.00	" 400-w. "
Waterdown...	26 00	3	4.5	2.25	9	4.5	0.9	10	1 00	3.5	2.4	0.3	10	10.00	per 100-w. Incan.
Waterford	39 00	3	5	2.5	10	5	1	10	1 00	4.5	3.0	0.4	10	14.00	" "
Waterloo.....	22 50	3	3	1.5	6	3	0.6	10	1 00	2.5	1.7	0.2	25 & 10	8.75 10.00 10.50 25.00 40.00	100-w. mul. or 75-w. series Incan. 100-w. ser. Incan. 150-w. mult. " 3-lt. Standard 1-100-w. & 2-60-w. 5-lt. Standard 1-100-w. & 4-60-w.
Waubaushene .	35 00	3	4.5	2.25	9	4.5	0.9	10	1 00	3.6	2.4	0.3	10	12.00	100-w. Incan.
Welland.....	14 25	3	2.25	1.125	5	2.25	0.15	10	1 00	1.8	1.2	0.15	25	9.00 18.00	" 250-w. "

West Hamilton	Served by Dundas	3	4	2	8	4	0.8	10	1 00	2.8	1.8	0.2	10	14.00	100-w. Incan.
Weston.....	30 00	3	3	1.5	6	3	0.6	10	1 00	3	2	0.2	10	12.00 40.00	" " 4-100-w. " on Standard
Williamsburg .	25 09	3	5	2.5	10	5	1	10	1 00	4.2	2.8	0.3	10		
Winchester ..	39 54	3	4	2	8	4	0.8	10	1 00	3.1	2	0.25	10	15.00	100-w. Incan.
Windsor.....	38 00	3	4	2	8	4	0.8	10	1 00	3.6	2.4	0.3	10	12.00 12.00 50.00	" " " " on Standard* 500-w. Incan. on Standard*
Woodbridge...	33 83	3	4.5	2.25	9	4.5	0.9	10	1 00	3.9	2.6	0.3	10	13.00	100-w. "
Woodstock ...	23 00	3	2.5	1.25	5	2.5	0.5	10	1 00	2	1.5	0.2	10 and 10	10.00 25.00	60 or 100-w. Incan. 250-w. Incan.
Woodville	70 24	3	6	3	12	6	1.2	10	1 00	4.5	3	0.4	10	13.00	100-w. "

NOTE (a).—For the first 40 kw. hrs., per month for the first 1,000 sq. ft., and 3 kw. hrs. for each additional 100 sq. ft. of floor area charged.
(b).—For all remaining consumption.

* Brackets or standards installed as local improvements.

MUNICIPAL PURCHASES AND SALES

The municipal electrical enterprises in Ontario require in the aggregate large quantities of poles, line wire, cross arms, insulators, transformers, house service meters and of everything needed for the construction and maintenance of their various projects.

This demand, can in a measure, be filled by individual municipal purchase, but this is not always satisfactory. Owing to the wide range in the variety of materials and in the requirements, the municipal officials may lack the equipment necessary to properly safeguard their interests, and may not know exactly what should be used and where it can be obtained to the best advantage. The requirements of an individual town are comparatively limited. It cannot always afford large quantities and accordingly has to pay higher prices. At times rush orders may be placed for urgently needed material, which through lack of provision, may not be in stock. For these and other reasons individual effort of this kind often means through lack of co-operation the more or less indiscriminate purchase of smaller quantities at higher prices, and the absence of an effective means of control which would tend to standardize quality and efficiency.

If the large requirements of the municipalities as a whole were combined and centralized, there would be created a purchasing agency which could control the various commercial conditions so that each municipality could obtain its comparatively smaller requirements under the favorable conditions attending competitive wholesale purchase.

To give practical effect to this centralized purchasing idea the Commission maintains a Purchasing Department whose services are offered to any municipality or Provincial institution in Ontario, whether connected with the Hydro system or not.

During the past year we have been buying for one hundred and thirty-two municipalities. Their total requirements, of over $500,000, have enabled us to obtain for them at prices lower than those previously available all of the many items required in the extension of their various projects. On transformers, lamps, watthour meters and rubber covered wire we have been able to effect savings of from five to fifty per cent. over the prices previously paid. These are only a few of the economies effected, but will serve to show what can be done by co-operation.

A feature of this centralized service to which attention should be directed is the possibility of intelligent discrimination. Low cost is important, but it should not be the only consideration. It is necessary to know that the article purchased represents good value for the money. We have on our staff men who are experts on the many materials and processes which enter into the make-up of the various items used. In addition, we have complete equipment for standardizing and testing. Full use of these resources is made by our Purchasing Department, so that it is in a position to know that the materials recommended represent the best values obtainable. We call attention to this as we have appreciated that such complete facilities are seldom available to the individual towns, and we want to make it perfectly clear that this service has been organized for their benefit and is available for the asking.

The reduction in Hydro rates has greatly enlarged the possibilities of electric service in the household and on the farm, and the sales of irons, air heaters, motors, and all of the many other utilities, have been greatly increased.

To assist the municipal officials in the promotion of this revenue producing business the Sales Department made a careful investigation of the merchandising conditions, and as a guide in formulating campaigns complete data was secured of the methods adopted by the leading electrical companies. This information has been condensed and is available for municipal use. A number of the municipalities have availed themselves of this service and have found that the broad gauged, progressive policies outlined have enabled them to show a very substantial increase in their sales of utilities.

In building up this business they have been further assisted by definite advertising campaigns, from which gratifying results have already been derived.

The services of the Sales and Advertising Department are freely offered to any of the municipalities in Ontario, and information in connection with this subject will be gladly given upon request.

RURAL POWER

Waterloo Township

USES ON A GROUP OF FARMS

In July, 1914, a group of seven men, six in the Township and one in the Town of Waterloo, having decided that they wanted electric service to their places, made arrangements whereby a syndicate outfit could be used and a line was built to their places as noted in our report of last year.

This outfit having been in use for more than a year, the Commission submits in the attached report, itemized by months, the uses for domestic and power purposes, under the heading of "domestic" and under the heading of "power," the sum of results being tabulated under the different headings, including service charge and the total for each farm, the average cost per k.w.h., including all charges, being indicated in the table below.

On page 232 is noted the work done at each of the farms, No. 1 to 6. The records were not kept in shape so that it could be reduced to cost per unit of work done, but the figures shown indicate the amount of value received from the uses of the large power outfit for the amount paid.

The rate that is in force in this township is along the lines of the new standard that is being considered by the Commission. The domestic uses at these places consists of lighting of the house, barns, buildings, the use of an electric iron in every case and of a washing machine in four places. In the latter part of August at two of the places pumping motors were installed.

Two services have been run to each farm, one to the domestic transformers, from which the secondary is run to the different buildings, and the other being a 2,200 volt service for the use of the syndicate outfit, this service in each case terminating at a point so that it is only necessary to use 75 feet of portable cable to connect the portable transformers with the motor.

The syndicate outfit that is being used at these farms is the 20 horse power one built for them and described in last year's report, the motor being of the standard induction type with auto starter mounted in one waggon, the transformers with a standard 3 phase meter being mounted in another waggon, both waggons being of the steel wheel farm type, on each of which was built an oak foundation and floor and covered with a bow top, weatherproof canvas curtains being provided so that the whole could be enclosed and so arranged that, in case of weather bothering while threshing or filling silos, they could be adjusted at an angle so as to provide protection for the equipment, and at the same time permit of the ingress and egress of air.

Waterloo Township Syndicate

Uses of power for Domestic and Power purposes for the year 1915.
Rate—Service Charge $30.00. Power 4c. per K.W.H.

Discount 10% for prompt payment from power only

Farm number.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	——
							K.W.H.						Total K.W.H.
1	48	35	28	33	21	17	20	30	33	38	59	47	409
2	48	31	23	23	29	55	17	19	25	36	51	54	411
3	39	49	33	18	10	10	13	12	19	23	36	33	295
4	31	27	21	23	14	15	16	15	20	38	56	43	319
5	31	26	23	18	12	12	10	15	21	23	35	27	253
6	45	17	13	12	6	6	7	13	15	16	7	25	182
7						On Town System							.....
													1,869
						Power used by 20 HP. Syndicate Outfit.							
1	73	....	.....	34	.....	.....	.....	283	.....	153	30	648	1,221
2	58	....	.. 42	26	59	32	12	131	192	185	745	88	1,570
3	67	....	.. 51	42	10	19	.....	89	289	228	267	457	1,519
4	76	....	.. 71	.....	.....	.....	26	107	134	.....	363	52	829
5	65	....	.....	49	20	.....	.....	51	245	.....	312	68	810
6	....	....	.....	.....	.....	.....	.....	.....	193	114	21	549	77
7	....	....	.....	.....	.....	.....	.....	260	.....	117	.....	.....	38 77
													7,203
													9,072

Farm Number	Service Charge.	Consumption Charge.		Total Charges.	Average Cost per K.W.H.
		Domestic.	Power.		
	$ c.	$ c.	$ c.	$ c.	
1.....	31 66	14 72	43 96	90 34	5.542
2.....	30 00	14 80	56 52	101 32	5.114
3.....	30 00	10 62	54 62	99 30	5.48
4.....	31 66	10 48	29 84	71 98	6.27
5.....	30 00	9 11	29 16	68 27	6.42
6.....	30 00	6 55	31 57	68 12	6.528
7.....	9 00		13 57	22 57	6.

NOTE.—No. 1 and No. 4 now pay an extra service of $5.00 per year from September 1st to December 30th.

For record of detail of work done see next page.

Waterloo Township Syndicate

WORK DONE BY 20 HORSEPOWER OUTFIT

No. 1 Farm

Silo filling	A 12 ft. x 42 ft. silo was filled, 40 ft. settled.
Threshing	2,000 bushels mixed grain.
	800 " wheat.
	300 " barley.
Sawed	15 cords (stove length) wood.
Chopped	2,000 bushels grain.
	(600 " " was chopped in January, 1916.)

No. 2 Farm

Silo filling	A 14 ft. x 39 ft. silo was filled, 36 ft. settled.
Threshing	1,120 bushels wheat.
	1,500 " mixed grain.
	450 " barley.
	1,000 " oats.
Sawed	12 to 15 cords (stove length) wood.
Chopped	2,400 bushels grain.

No. 3 Farm

Silo filling	A 12 ft. x 40 ft. silo was filled and settled and refilled.
Threshing	900 bushels wheat.
	1,800 " oats.
	1,500 " mixed grain.
	500 " barley.
Sawed	12 cords (stove length) wood.
Chopped	3,000 bushels grain.
	(800 " " chopped in January, 1916.)

No. 4 Farm

Silo filling	Two silos were filled—one 10 ft. x 22 ft. and one 8 ft. x 22 ft. Both were filled full.
Threshing	300 bushels wheat.
	1,600 " oats.
Sawed	(Probably wood sawed, but we have no record of it.)
Chopped	1,000 bushels grain.

No. 5 Farm

Silo filling	An 11 ft. x 30 ft. silo was filled and settled.
Threshing	325 bushels wheat.
	1,550 " oats and mixed grain.
Sawed	16 cords wood (stove length).
Chopped	1,100 bushels of grain.

No. 6 Farm

Silo filling	A 14 ft. x 40 ft. silo was filled, 24 ft. settled.
Threshing	700 bushels wheat.
	2,000 " mixed grain.
	300 " barley.
Sawed	10 cords (stove length) wood.
Chopped	½ day—about 300 bushels grain.

ORNAMENTAL STREET LIGHTING

The demand for better street lighting is growing rapidly. As heretofore, the supply of Hydro power to a municipality is invariably accompanied by an improvement in the street lighting. In addition, however, the decreasing cost of power and the introduction of equipment more efficient and more pleasing to the eye, has resulted in a higher standard of illumination for all municipal thoroughfares.

New designs have been developed in lighting standards, brackets, fixtures and glassware, and in other details less in evidence but of much importance.

The gas filled incandescent lamp is superseding all other types for street lighting purposes. The behaviour of this lamp in service is very satisfactory, as shown in the results obtained in many installations, some of which have been in operation for more than a year.

These lamps have required radical changes in the design of fixtures and the latter have been improved with the experience gained under operating conditions.

Improvements have been made by the manufacturers in the glassware supplied, obtaining better characteristics in diffusion and absorption.

A close study is being made of various new and important developments and further advances will be made during the coming year.

Regarding individual installations, the type placed in St. Thomas is worthy of remark. This system of combination lighting and railway poles with single wire overhead feed to the lamps on a series circuit stands out as the best method of clearing the street of wooden poles and providing a White Way at minimum cost.

In residential street lighting, Windsor has established a remarkable record, having placed in operation, to date, for this class of lighting alone, 1,226 ornamental standards which are fed by 52 miles of underground cable.

Chatham

One hundred and seventy-nine ornamental standards were installed, with underground conduit and cable, on three classes of streets, viz.: main busines streets, main thoroughfares other than business streets and residential streets. Three types of standards were used, having the same general outlines, but varying in height and in general dimensions with the class of street and the candlepower of the lamp used.

The cost of the installation was $23,676, which is assessed against the property owners on the local improvement plan.

The system was put into operation on July 7, 1915.

Renfrew

Work was commenced on the new street lighting system on May 3rd, and completed on July 28th, 1915.

The arc lamps, operated by a private company, were discontinued and the new system supplied with current from the municipal power plant.

Forty ornamental standards were erected on the main street with underground cables, and 297 bracket lights were used to illuminate the other streets.

Two hundred and thirty-four wood poles were erected and attachments were also made to 304 foreign poles to carry the overhead circuits.

Constant current transformers of total capacity 64 k.w. were installed.

The cost of this system was $15,700.

St. Thomas

One hundred and six combination lighting and railway poles were supplied to this municipality with lighting brackets designed especially for the St. Thomas White Way.

A gas-filled lamp of 750 c.p. was mounted on each pole and the feed to the lamps was supplied by a single No. 6 gauge W.P. wire strung from pole to pole.

Current was turned on officially on April 20th, 1915.

Seven additional units were installed in October, 1915.

All overhead line construction for service to buildings is being removed from Talbot Street.

Simcoe

An installation of 27 ornamental standards was completed in March, 1915. Gas-filled lamps of 400 c.p. were used. Steel tape armored cable was laid in the ground to supply current to the lamps.

The cost of the installation was $3,096.

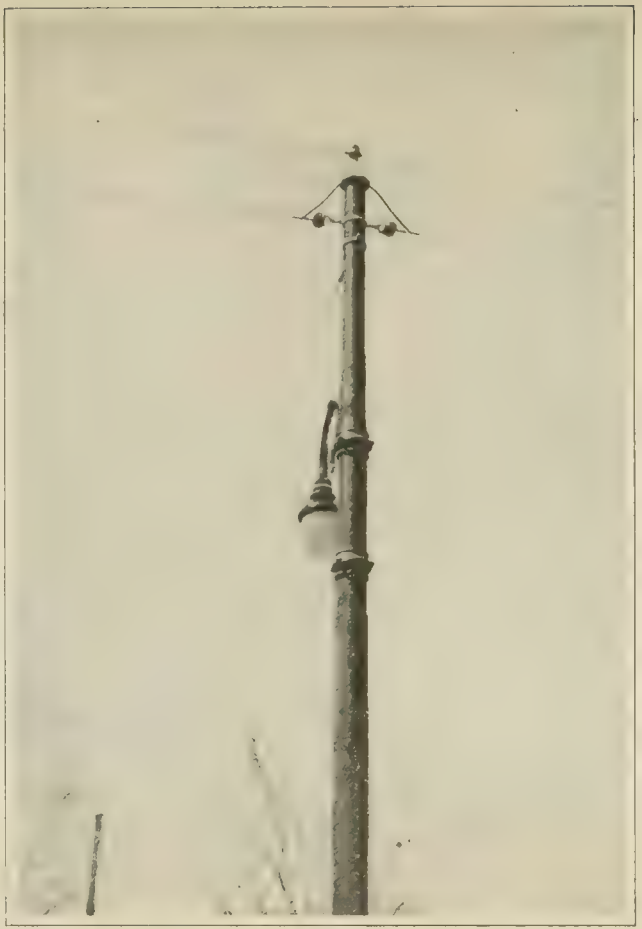
Windsor

Extensions to the street lighting have been made during the year.

There are now 1,496 ornamental standards in operation for which there has been installed 59 miles of underground cable.

Many other municipalities were assisted in various ways, in some cases being given general information pertaining to street lighting, and in other cases specific recommendations, including estimates and plans. Assistance was also given in the choice of equipment and in the purchase of same. The municipalities listed below have availed themselves of this service: Berlin, Chesley, Dresden, Guelph, Kincardine, Kingston, Listowel, London, Midland, North Bay, Peterboro, St. Catharines, St. Mary's, Stratford, Wallaceburg.

Recommendations are now being prepared for white way systems for the following municipalities: Blenheim, Exeter, Ingersoll, Petrolea, Ridgetown.

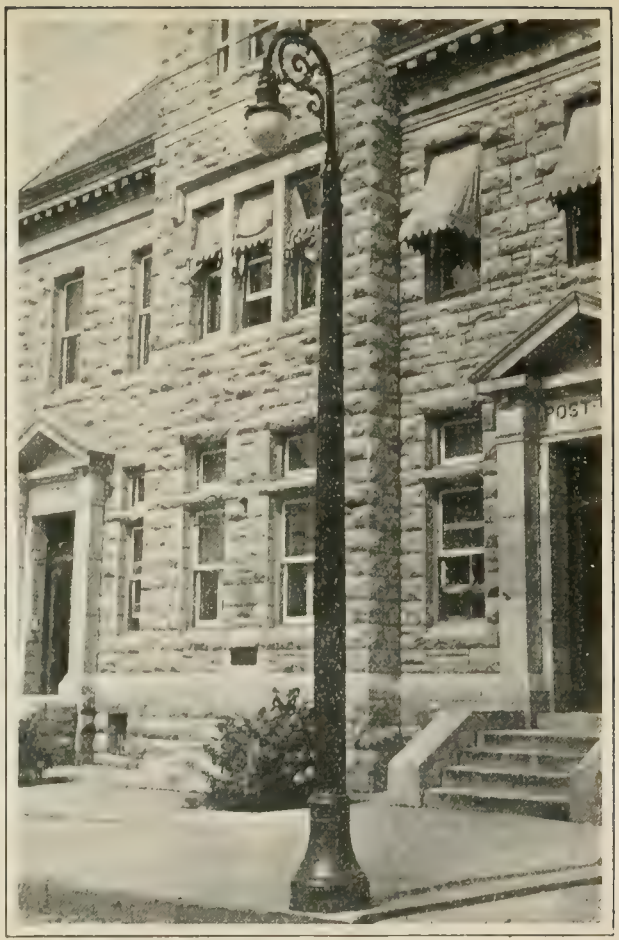


St. Thomas White Way—Overhead Line, with Return Wire

St. Thomas White Way—Combination Railway and Lighting Pole

p. 234b
17 H.

Renfrew White Way—Concrete Lighting Standard



Renfrew White Way—Cast Iron Lighting Standard

MUNICIPAL UNDERGROUND CONSTRUCTION

Hamilton

Throughout the period of construction careful records were made of the cost of the joint underground conduit system.

On the completion of the construction work an equitable distribution of the cost was made amongst the companies interested, viz.: Hamilton Cataract Power, Light & Traction Co., The Hamilton Hydro-Electric Department, The C. P. R. Telegraph Co., and the G. N. W. Telegraph Co.

Reports were prepared dealing with certain claims for compensation on the part of the Hamilton Cataract Co. against the municipality of Hamilton.

Berlin

Designs were drawn up for an underground feeder conduit line leading out of the substation now in course of erection.

The duct run and manholes will be constructed by the local Water and Light Commission, the material for which has been purchased through the Hydro-Electric Power Commission.

Owen Sound

A report was made to the Gas and Electric Commission on a proposed underground conduit line on Queen Street.

Kingston

A report was made to the Civic Utilities Commission on the cost of the underground distribution system already installed.

London

A report was made to the Public Utilities Commission which contained information in regard to the construction of a joint underground conduit system and other matters relative thereto.

Reports were also prepared which pertained to underground conduit construction in Ottawa and Toronto.

Submarine cables and cable terminals were purchased under the Commission's specifications for Chatham, Kingston and Wallaceburg.

ELECTRIC RAILWAY PROJECTS

After the passing of the amended Hydro-Electric Railway Act in 1914, there were a number of requests from municipalities for a new clause allowing certain districts of a township to promote and construct lines through their own section of the township without affecting the remaining portion of the municipality. Complying with this request a new Act was passed in March of this year which provides for this contingency. The new Act also gives the Commission power to purchase existing electric railways by inserting proper clauses in the agreement between the Commission and the municipalities affected.

During the year requests for reports and estimates on proposed lines have been received from time to time, and the total number of municipalities that have applied since the first Act was passed to date is now as follows:—

Townships, 158; villages, 47; towns, 46; cities, 15; police villages, 8; miscellaneous committees, Boards of Trade, etc., 7; a total of 281 resolutions.

It has been necessary to maintain two parties in the field constantly making preliminary surveys and gathering traffic statistics, which information is used in preparing estimates of the cost of construction and equipment and also estimates of the probable revenue that will be obtained in the event of the lines being constructed. To date preliminary surveys have been made and estimates prepared on the cost of constructing approximately 2,000 miles of line. A considerable portion of this mileage is in the nature of alternative routes.

Delegates of councils and ratepayers from the municipalities in various sections of the Province have appeared before the Commission a number of times during the year for the purpose of bringing to the attention of the Commission the particular needs of these districts. The result of these meetings has been that the engineers are advised before entering the field of the particular requirements of the district under survey, which allows the engineering party to perform their work in a more intelligent manner than would be possible if they were not provided with such information.

Standards and Specifications

The work commenced in 1913 of preparing standard plans and specifications for roadbed construction was continued, and this data is now available for use in the event of construction of any of the lines, so that tenders may be called for with as little delay as possible.

A great deal of time and thought was expended in preparing these plans, and the standards of the prominent roads in both Canada and the United States, as well as recommendations of the various railway societies, were carefully studied before decisions were reached.

Before the specifications and plans could be prepared for rolling stock and equipment, as well as the sub-stations, it was necessary to select a system of electrification. During the last eight or ten years there has been considerable discussion between the most prominent engineers in the United States and Canada on this subject and opinions have been divided between the 1,500-V. direct-current system and the high-tension single-phase alternating current system. However, during the last four or five years there has been a distinct movement in favor of the first of these two systems for purely interurban railways. The chief reason in favor of this system is that the equipment is lighter, cheaper and more standard, as well as being cheaper to maintain and being able to operate over existing 600-volt city lines.

The chief advantage of the single-phase system is found in the fact that substations may be placed at greater intervals and the overhead system can be designed much cheaper.

The Commission, after considering the subject for a year or more, decided that the proposed Ontario system should be constructed on the 1,500 and 3,000 volt direct current system.

The various manufacturing firms in Canada, United States and Europe placed their expert engineers at the service of the Commission and tenders and specifications, with discussions, were forwarded for consideration. A number of more prominent interurban roads in the United States were visited and the officers interviewed as to their opinions on this very important question, and the Commission believes that the decision which has been reached will allow of a considerable saving in the cost of equipping the various lines due to the fact that a standard form of apparatus may be used.

The centre entrance type of car has been used in recent years on some prominent lines in the States, chiefly for the reason that it gives greater seating capacity for the same length of car, and is also a more pleasant car to ride in, due to better separation of the smoking, baggage and main passenger compartments. Sample specifications of such cars with discussions were forwarded to the Commission by the more prominent car manufacturing companies in both Canada and the United States, and it appeared that there were such great differences in the design of cars of the same length and seating capacity that the planning of these cars was not carried out in a proper manner. Expert opinion was therefore obtained and a decision was reached that the centre entrance type of car was impracticable for the proposed Ontario lines, chiefly from the standpoint of safety.

A properly designed steel car, provided with a vestibule, has been demonstrated as being the safest type of car to ride in, inasmuch as the vestibule can be designed to collapse when in collision so that the main framing of the car itself will be able to withstand the strains in a satisfactory manner.

Specifications and plans were therefore prepared for a modern 60-foot, three-compartment steel car.

Projects

General:

The table below gives a record of the various surveys that have been made to date:—

Work Order.		Line.	Preliminary Survey.
E. R.	3	Toronto-North Eastern	295.00 miles
	4	Kingston-Cornwall	115.00 "
	5	Barrie-C.P.R.	8.20 "
	6	Huron County	222.20 "
	7	Guelph, Georgian Bay East Line	226.62 "
	8	London-Lambton County	126.78 "
	9	London-Stratford	52.27 "
	10	Guelph-Hespeler	10.00 "
	12	Berlin-Woodstock	31.00 "
	13	Guelph-Hamilton	35.00 "
	15	London-Port Stanley	24.05 "
	16	St. Marys-Exeter	19.84 "
	20	St. Thomas-Aylmer	11.30 "

Work Order.	Line.	Preliminary Survey.
21	London-Aylmer	18.50 Miles.
22	Hamilton-Galt	35.00 "
23	Lyons-Tillsonburg	17.00 "
24	Guelph-Orangeville	33.00 "
26	Aylmer-Port Burwell	15.00 "
27	Drumbo-Linwood	31.20 "
28	Tillsonburg-Woodstock	23.00 "
29	Hamilton-St. Catharines	32.10 "
30	Hamilton-Welland	40.00 "
33	St. Catharines-Queenston	8.10 "
34	Dunnville-Beamsville	24.00 "
35	Welland-Port Colborne	7.10 "
36	Port Colborne-Bridgeburg	20.00 "
38	Port Credit-Hamilton	28.00 "
40	Port Colborne-Dunnville	22.50 "
42	Listowel-Fullarton	31.74 "
47	Dresden-Strathroy	37.90 "
48	Arkona-Grand Bend	23.00 "
49	Wingham-Chesley	43.50 "
50	Flesherton-Collingwood	32.64 "
51	Guelph-Port Credit	19.40 "
55	Toronto-Port Credit	8.00 "
56	Guelph-Berlin	31.50 "
57	Berlin-Stratford	66.50 "
59	St. Catharines-Pelham Township	11.00 "
60	Welland-St. Catharines	10.00 "
61	Newmarket-Barrie	37.00 "
62	Barrie-Midhurst	6.00 "
63	Chelsea-Green Spur London	2.50 "
64	Collingwood-Midhurst	26.00 "
65	Ottawa-Morrisburg	51.80 "
66	Penetanguishene-Midhurst	52.50 "
68	Dunnville-Simcoe	32.00 "
69	Baysville District	73.40 "
70	Hamilton-Port Dover	36.00 "
		2164.14 "

Toronto-Northeastern District:

Early in the year eleven municipalities in this district forwarded signed copies of an agreement with the Commission to provide for the construction and operation of some eighty miles of line.

Goderich-Kincardine District:

Acting on a request from the municipalities interested in the West Shore Railway, the Commission prepared estimates showing the cost of completing the road and operating it by electric or gasoline power.

Aylmer District:

Early in the year a report was sent to the municipalities in this district showing that a line from Westminster Junction on the London and Port Stanley Railway could be built through Belmont to Aylmer with connection to Springfield, Brownsville and Tillsonburg, and operated as a paying proposition.

The municipalities have this report under consideration.

London and Port Stanley Railway:

Engineering assistance was given the London Railway Commission and our standards and specifications for the construction of proposed Ontario Radials were used in calling for tenders and in carrying out the work of reconstruction of this road.

Engineers were loaned the London Railway Commission to supervise the work and to order material.

New 80 lb. steel rails were installed with new ties and ballast; the culverts and station buildings were repaired, and on completion of this work and receipt of electric equipment, the Pere Marquette ceased to operate the road and electric service was given under the managemnt of the London Railway Commission.

In addition to the above work our standard specifications for electrical equipment of sub-stations, overhead, bonding and car equipments were used in procuring tenders from the various electrical manufacturing companies for the supply of the necessary equipment. On receipt of the tenders a recommendation was forwarded to the London Railway Commission and contracts were signed with the Canadian Westinghouse Company for the supply of sub-station apparatus, and with the Canadian General Electric Company for the supply of equipment for cars and locomotives.

It was found that we could procure our own overhead construction material at more advantageous prices by having it manufactured in various Canadian plants and assembled by our workmen on the L. & P. S.

Our standard specifications for car bodies and trucks were also used to secure tenders on such material, and recommendations were forwarded to London with these standards.

After the contracts for cars, locomotives and equipment were signed by the London Railway Commission we also supervised the manufacture and installation of this apparatus, and the result was that the road was duly opened on July 1st and has given very satisfactory service to date in spite of very unfavorable circumstances existing during this year.

TORONTO STOREHOUSE

As mentioned in previous reports, the handling of line material, electrical appliances, etc., has been centralized in a storehouse located at Toronto. Since its establishment in 1913, the amount of material handled by the storehouse has steadily increased in volume, and it was necessary to provide additional storage space early this year. The shipments from the storehouse include line hardware of all kinds, insulators, station and line equipment, lamps, heaters, toasters, irons, etc. In addition there are handled miscellaneous supplies such as camp equipment, scrap wire, tools, etc.

Due to extensive advertising campaigns among the municipalities, the sale of lamps and electrical appliances has assumed larger proportions than in previous years, and a large stock is necessary to meet the demand made upon these classes of goods.

The storehouse and laboratories being located in the same building, it is possible to test materials received with a minimum of expense for handling. This feature facilitates the quick delivery of goods from the storehouse.

TESTING AND RESEARCH LABORATORIES

The work of the laboratories falls under two main heads:—

1. Tests and investigations on materials and apparatus received in the storehouse on stock orders, or submitted to the laboratories by the various departments of the Commission or by outside parties.

2. Tests and investigations relating to problems arising in the operation of the system.

The first may be called the routine work of the laboratories, and includes the testing of samples of materials and apparatus submitted to the Commission for purchase, and the investigation of types of apparatus and materials submitted for approval to the Electrical Inspections Department and turned over to the laboratories for investigation and report. This work includes a great variety of tests, and is described in greater detail below.

The second main division of the work of the laboratories may be designated as "Industrial Research." It includes the investigation of engineering problems which arise in the course of the operation of the system, the solution of which requires research work which can best be carried on in the laboratories. These problems are in the main common to all large power systems, and the solution of those peculiar to any system is of assistance to the engineering profession in general. Those engaging our attention deal with such subjects as the insulation of high-voltage lines, the protection of the system from electrical disturbances, special problems relating to the metering of electrical energy, problems in photometry arising from the introduction of new types of lamps, and others of a varied nature.

The organization of the laboratories has been described in a previous report. The work of each division is described in detail below:—

High Tension and General Testing Laboratory

Descriptions of the testing equipment and laboratory apparatus of this department have been printed in the annual reports of 1913 and 1914. Sufficient here to state that our equipment is continually increasing by perfecting and adding to the original equipment and by the installation of new apparatus.

A great variety of tests is performed in this department with apparatus available for the purpose or for which special apparatus is constructed in our laboratory machine shop. The larger proportion of these tests is made for the Purchasing Department of the Commission, to determine the relative merits of the materials used by the Commission and the municipalities supplied by them and purchased from the manufacturers. In this way the Commission and municipalities are insured against the purchase of inferior goods. Other tests are carried on with the idea of making helpful suggestions to the manufacturer tending toward the ultimate improvement of the articles in question. In many instances this has led to changes in the design by manufacturers, with marked improvement of product.

Following is a partial list of the different classes of tests performed during the past year, together with some photographs illustrating same.

Mechanical and electrical tests on high-voltage insulators of the suspension type and pin type for any commercial voltage; tests on line entrance, switch and transformer bushings, either of the porcelain or of the built-up type; mechanical and electrical tests on bus insulators, guy-strain insulators, etc.

Tests to determine mechanical and electrical properties of electrical transmission cable and ground cable.

Cable clamps are tested for holding power and for electrical conductivity.

Tests on switches: these include tests on pole-top air-break switches used on our 13,000- and 45,000-volt lines; motor starters; circuit breakers; fuses for all potentials up to 15,000 volts; cutouts and, in fact, on protective devices in general.

Power and lighting transformers and constant-current series lighting transformers. These are tested to determine their efficiency, exciting current, regulation, heating and excellence of construction.

Electricians' and linemen's rubber gloves: tests on this particular line of electrical supplies have resulted in a wonderful improvement in product and increased care in the manner of rating with respect to the voltage of the lines which may be safely handled with a given glove.

All the line hardware receives careful tests to determine mechanical strength, quality of material and general suitability. This testing is largely done in the laboratory or under its supervision. Tests were recently made to determine the holding power of guy anchors under actual service conditions. Samples of all shipments of galvanized material are tested for galvanizing before being accepted by the Commission. At the same time, quality and workmanship are carefully noted, and, when necessary, criticisms are made.

Among tests of a more special nature may be mentioned tests to determine relative heat insulating properties of construction materials and tests to determine the co-efficient of expansion with temperature rise of porcelain and various metals and alloys.

A well-equipped laboratory is maintained for the testing of Portland cement, sand and coarse aggregate for concrete. Tests on cement are carried out according to the specifications of the Canadian Society of Civil Engineers, and cover the following:—

1. Fineness.
2. Time of setting.
3. Tensile strength.
4. Soundness or constancy of volume.

Any sample failing to pass test or which gives a doubtful test is at once given a check test, reserve cement for such contingency being labelled and stored at the time the sample is received at the laboratory.

Meter and Standards Laboratory

The work of the Meter Department has continued to increase in volume and variety, each addition to the equipment making possible a large number of useful tests or investigations which would otherwise be impossible.

The problem of obtaining a uniform basis of standardization has been energetically pursued, and frequent checks have been made with the Dominion Government standards at Ottawa. There is now on order a complete set of laboratory standards which, when installed, will by means of standard cells and resistances, be checked directly against the international standards, thus enabling the laboratory to maintain accurate standards for electrical measurement. In connection with this, the matter of determining the constants of instrument transformers has been investigated, and apparatus constructed whereby these values may be determined with great accuracy. During the year a number of portable instruments has been added to the laboratory equipment, and by means of these the solution of metering problems, both for the Commission and its customers, has been greatly facilitated.

A comparison, according to the specifications adopted for acceptance tests of watt hour meters, has been made on a number of the most recent types of meters, instruments of the following makes having been tested:—

Canadian General Electric	Packard
Chamberlain and Hookham	Siemens
Duncan	Canadian Westinghouse

All points, both mechanical and electrical, of these meters have been examined in detail, compared with results of previous investigations, and listed in such a way as to give comparative values of the meters in the form of percentages of an assumed ideal meter.

The Government inspection of meters for Toronto district has been continued in the laboratory, and a large number of new instruments have received the seal of the Department of Inland Revenue, arriving at their destination ready to be installed.

The exchange of meters between municipalities who, taking Hydro power, must change their frequency, has assumed considerable proportions, and large numbers of instruments sent in have been cleaned, overhauled, sometimes re-lagged, and, where possible, Government inspected for reinstallation on new systems. In this way many meters which would otherwise have been a direct loss to their owners have been given a renewed lease of life and are probably good for five or more years of service. These meters represent a great variety of makes, ranging from the most modern to some long since obsolete. Among them may be named the following meters:—

Bergmann	Packard (new type)
Canadian General (Thompson)	Peterborough
Chamberlain & Hookham	Sangamo (Gutmann)
Ferranti	Sangamo (mercury motor)
Fort Wayne	Siemens
Packard (Scheeffer)	Westinghouse.

Meter Test Board.—Meter Laboratory

Photographic Laboratory

There have also been a number of cases where disputed and defective watt hour meters and instrument transformers have been sent in, their trouble diagnosed and rectified.

Detailed investigations and experiments have been carried out in the measurement of excess loads and integrated demands, meters for both quantities having been constructed and tried out. In addition to the Commission's own experimental models, a number of instruments submitted by manufacturers were examined and reported upon. The only suitable instrument on the market for the measurement of excess power, (i.e., energy consumed in excess of a certain pre-determined "firm power,") was unfortunately of foreign manufacture, and efforts are being made to replace this meter at a reasonable price by one of home manufacture. The measurement of integrated demand presents, on the other hand, the difficulty of obtaining a definition suitable for embodiment in contracts of the quality measured by the meter. A number of demand meters are on the market, measuring according to one definition or another; none of them, however, giving the true value. To make possible the use of maximum demand meters, and the embodiment in power contracts of results obtained from their indications, the following definition has been suggested: "Maximum demand shall be defined to be the indication of an instrument so calibrated that when any constant load in watts (within its capacity) is passed through it, for an interval of time coincident with the period established by the instrument, it shall at the end of the time interval indicate that load." The above definition is sufficiently broad to include all the successful demand meters now on the market.

Among the tests performed by this department may be mentioned those on electric cooking stoves, with particular attention to oven characteristics. Curves were made of temperatures and energy consumption, and from these curves were calculated the comparative costs of doing various classes of cooking. It may, however, be mentioned that, owing to the low price at which Hydro power may be obtained, the cost of energy was not the only point considered, but that a careful study was made of all mechanical features with regard to safety, appearance, convenience, durability, etc. The following makes of stoves were submitted for test:—

Hughes	Ogden
Moffatt	Westinghouse (Copeman)
National	McClary Mfg. Co.

Besides the work of standardizing and testing, that of repairing old apparatus and developing new has gone on continuously. Among the repair work may be mentioned:—Meggers, meters of all kinds, relays, small motors and instrument transformers. The development work included special testing apparatus and meters, protective and regulating relays, instrument transformers, load banks, rheostats, etc.

Other tests which have been made include station relays, water heaters, low resistance measurements, wire connectors, street lighting relays, time switches, graphic meters, sad irons, electric railway signal apparatus, telephone equipment, and power plant protective apparatus.

Lamp Laboratory

The policy of the Commission of supplying to the municipalities only lamps of approved quality demands that close attention be paid to all lamps received for stock. The methods of testing and inspection prescribed by the specifications

are closely followed. The result of such inspection is that the quality of lamps is maintained at a high standard, and complaints from users are very few in number. All cases of unsatisfactory performance of lamps in service are investigated with the object of determining the causes and providing against their recurrence as far as is possible. By keeping in close touch with the manufacturers, all questions regarding the performance of lamps are adjusted with little delay. Experience has shown that the requirements of the different municipalities have taken definite form, permitting a better proportioning of the various classes of lamps comprising the stock. Gas-filled lamps are becoming better known and are being used in ever increasing quantities. Some alterations in the design of these lamps have been made, tending to eliminate what were formerly weak features of construction. The trend of development is toward greater uniformity of design amongst the different manufacturers. Gas-filled street series lamps have entirely replaced the vacuum series lamps and are rapidly replacing all arc lamps except the most improved, luminous arc, type. Many reports of favourable performances of gas-filled lamps for street lighting have been received from different municipalities. Several municipalities have sent samples of lamps for life test which have been submitted to them by agents. These, along with the routine life-testing of stock lamps, have kept the life-test racks going continuously at practically full capacity.

The ever-increasing efficiency of lamps and the attendant decreased cost of light has resulted in a more liberal use of light. The tendency is toward the use of higher powered units. The number of applications of light from incandescent lamps is steadily increasing.

Carbon lamps are practically obsolete. Some new tungsten lamps have been placed on the market. Among them are concentrated filament lamps of 25 and 40 watts capacity, and the 60 watt gas-filled lamp.

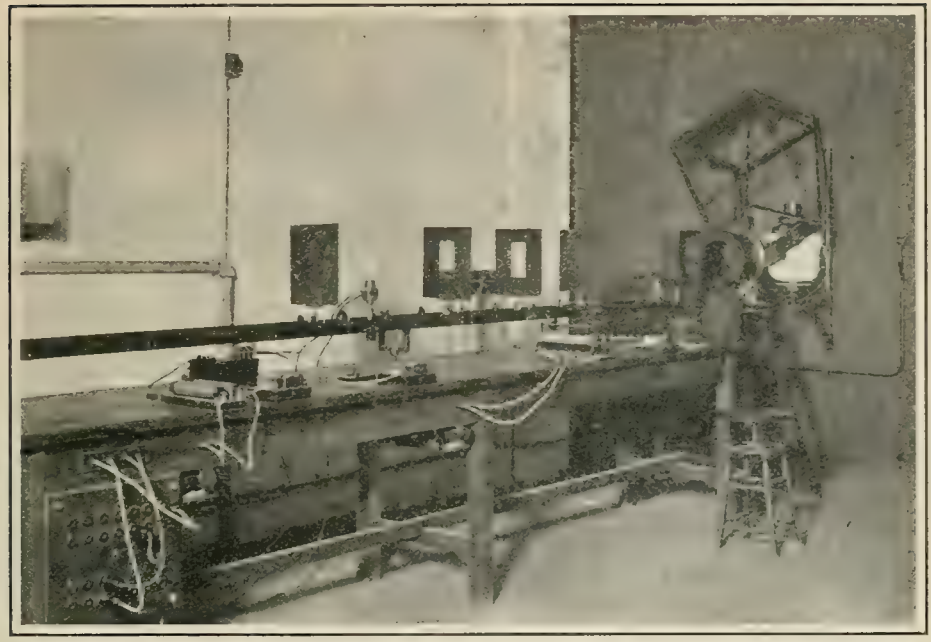
Some necessary additions have been made to the metering equipment of the lamp laboratory, and an experimental integrating sphere has been fitted up for the testing of small filament lamps of both vacuum and gas-filled types.

Illumination Laboratory

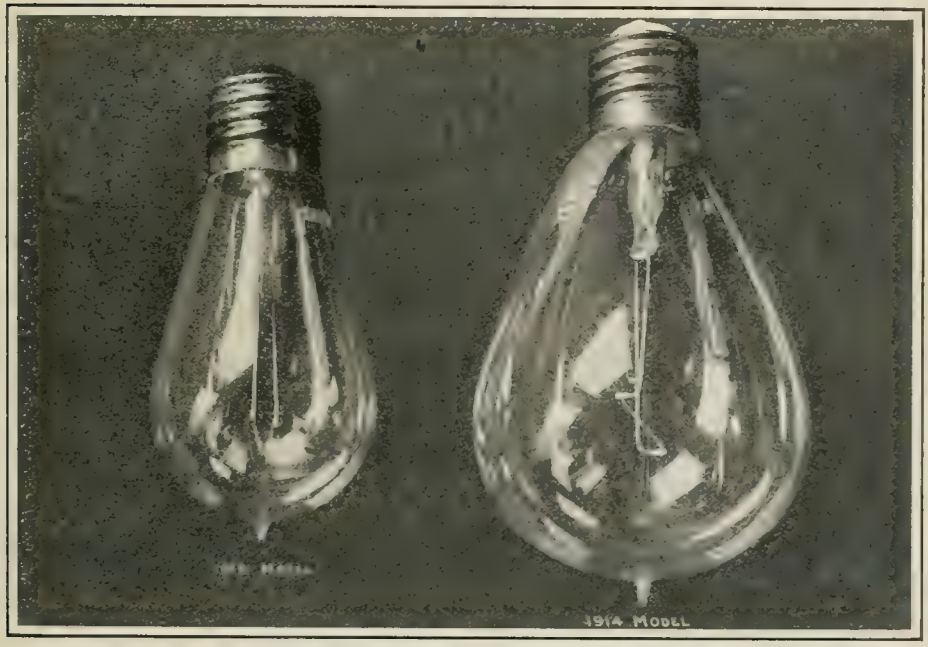
The Illuminating Engineering Department of the laboratory has endeavoured to keep pace with the advance in the science of illumination. More and more importance is being placed on illumination, which has necessitated a broadening of the scope of this department. A large number of investigations have been conducted to furnish data and information to various departments of the Commission and to some private enterprises.

A series of tests was made on several headlights that were submitted for use on the London & Port Stanley Electric Railroad. These were tested for angular spread of beam and distribution of intensity across the beam; also the effect produced by changing the position of the lamp relative to the reflector and the use of different styles of lamps. These tests furnished valuable information which assisted in a selection of the most suitable headlight for the purpose.

The use of gas-filled lamps for show windows involves a fire risk which it is necessary to keep within reasonable limits. With this end in view, a test was made under conditions approximating those in the average show window to determine the conditions resulting from the use of gas-filled lamps. Data secured from these tests, along with heat radiation tests at different parts of lamps, enabled



Photometer in Illuminating Laboratory, showing Distribution Head



Showing Development in Series Gas-Filled Lamps

the inspection department to impose limits for the use of gas-filled lamps beyond which it is not advisable to go.

The question of liability to failure of gas-filled lamps for street lighting during rain or sleet storms has also received attention. Rain conditions were produced in the laboratory and lamps of different makes were subjected to tests while unprotected from the full effect of the downpour.

Interior illumination has been investigated in connection with the requirements of the new office building on University Avenue. A suitable room was selected and fitted up for use as a test room. A preliminary illumination survey was made with different sizes of lamps to determine the most suitable size to meet the requirements, after which complete tests were made on ten fixtures of different styles, under similar conditions, and the results reduced to a common basis of comparison. Much valuable data was thus obtained, and the various characteristics of the different fixtures were compared. Photos were made to show the general appearance and diffusing qualities of the glassware.

Some installations of street lighting involving new ideas and apparatus were tested, and the results tabulated for future reference when new installations are to be planned.

The laboratory distribution photometer has been completed, and the laboratory is in a position to undertake more varied and extensive tests than before. The illustrations show the general construction of this photometer. The track is twenty feet long, and at one end is the distribution head which enables candle power measurements to be made at any direction in a vertical plane while the unit under test is stationary and held in its normal position. Its construction enables it to be used also as a precision photometer when desired. The photometer is suitable for testing either upright or pendant fixtures or arc lamps. A large number of various types of glassware and reflectors have been tested since its completion.

The above-mentioned tests are a few of those that have been conducted throughout the year. The laboratory is equipped for making practically every test that is required of an illumination laboratory, such as illumination surveys both inside and outside, acceptance tests on opaque reflectors and reflecting and diffusing glassware; diffusing, transmitting and reflecting properties of glass; reflecting and absorbing characteristics of paper and coated surfaces and the investigation of lighting units installed under service conditions.

Photographic Laboratory

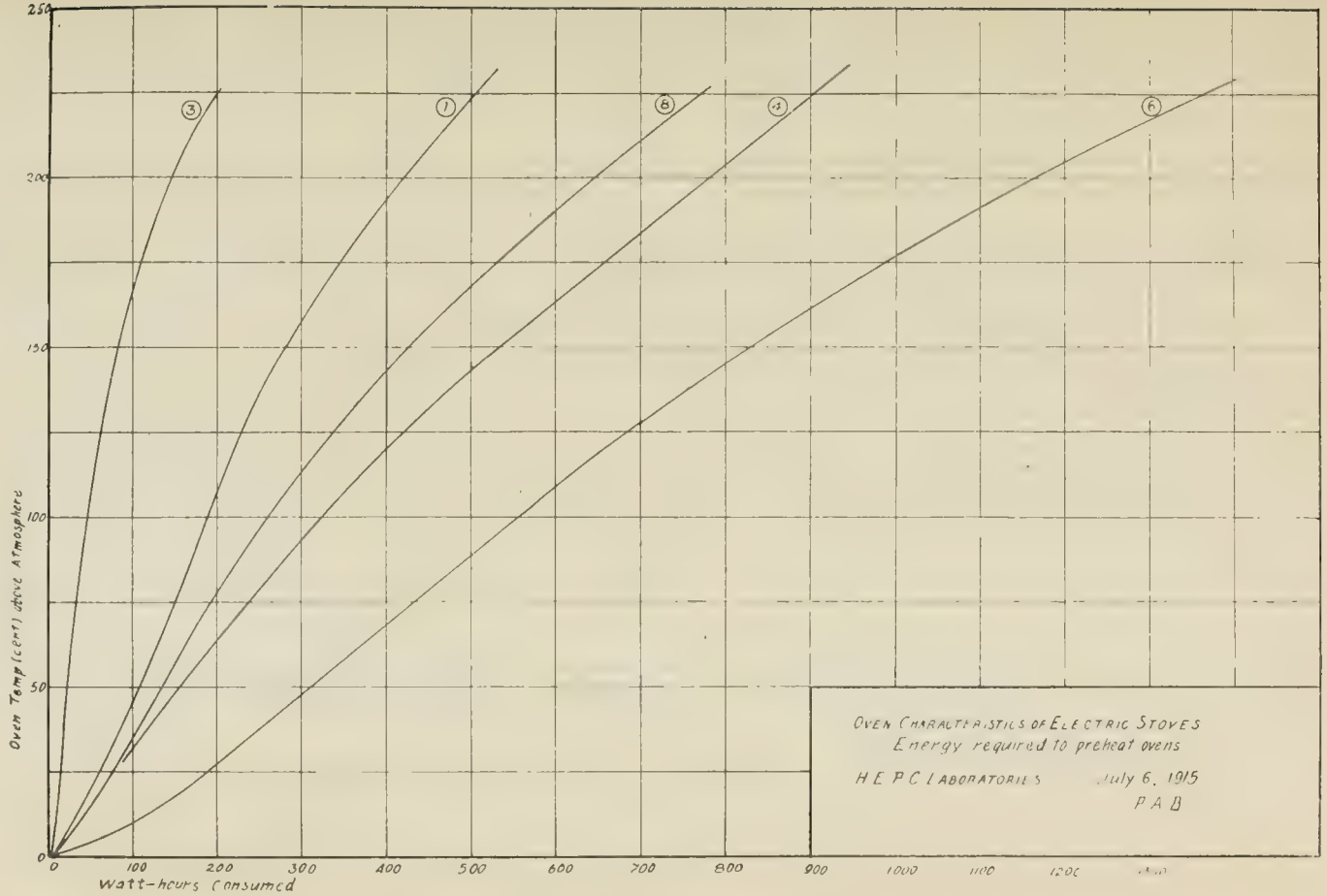
During the year the photographic work done by the laboratories increased considerably, and early in 1915 it was decided to equip a laboratory to handle any photographic work which might be necessary.

With this end in view an official photographer was appointed and a department organized. Additional space was provided in the laboratory building sufficient to include two dark rooms and a workroom. The equipment includes a studio camera for making copies, lantern slides and enlargements up to 8 x 10 inches, two view cameras 8 x 10 inches and 5 x 7 inches with suitable lenses covering a considerable range and capable of handling every kind of work.

Many photographs are taken by the engineers in the field for purposes of record and of illustrating reports. The exposed films are sent in to the laboratory, where they are developed, numbered, titled and filed. Prints are made from them

and mounted in albums suitably classified and kept in the office files. In cases where special photographic records are required, the official photographer proceeds to the desired locality and obtains a complete set of photographs, which are also placed on file as described above. The negatives thus obtained are then available for reproduction by contact enlargement, reduction, or on lantern slides. In this way a progressive record is kept of the construction work proceeding on the system.

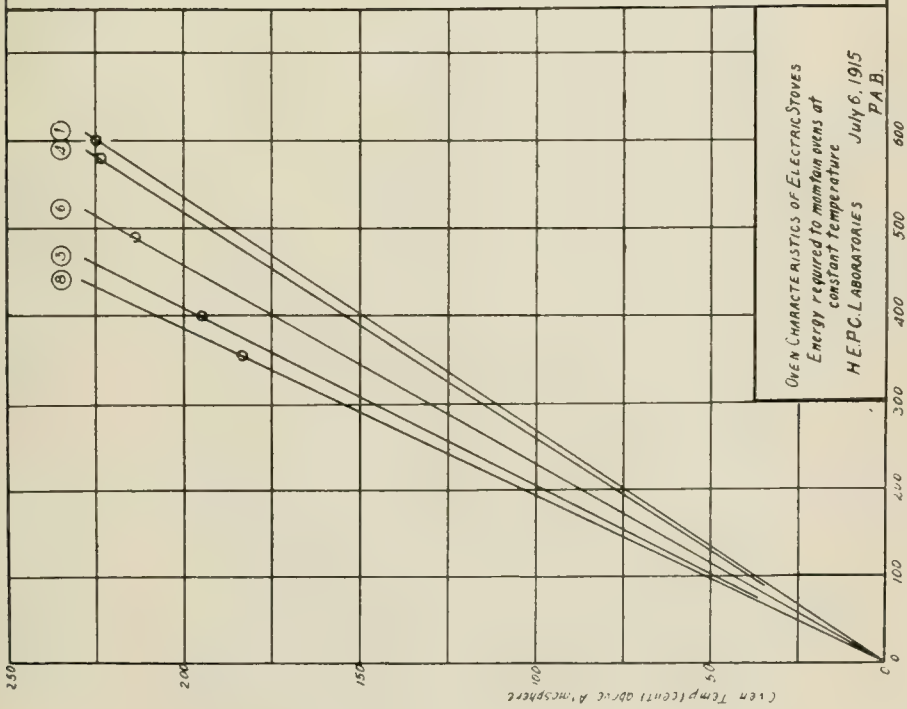
During the year over 500 orders have been handled, adding over 2,000 new negatives to the files, and about 10,000 prints made for reports, files, etc.


Oven Temp (cent) above Atmosphere
Watt-hours Consumed
0
50
100
150
200
250
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
3
1
8
4
6
OVEN CHARACTERISTICS OF ELECTRIC STOVES
Energy required to preheat ovens
H E P C LABORATORIES
July 6, 1915
P A B

P 48

Oven Characteristics of Electric Stoves
Comparative summary of tests

Test No	1	3	4	6	8	
Depth of Oven, inside — inches	16	12	17.5	17.5	16	
Height - " -	14.5	12.5	13	13	13.5	
Width - " -	12	17	17.75	18	19	
Area " " " sq in	1606	1134	1408	1554	1552	
Volume cu in	4745	2550	3725	4100	4110	
Maximum Watts in Oven	2375	1500	2225	1910	1375	
Time required to attain 250°C — min	12	8	24.3	43	33	
Watt-hours required to attain 250°C Total	505	200	900	1375	760	
" " " " " " Per sq in area	.314	.176	.614	.885	.485	
" " " " " " Per cu in vol	.106	.078	.241	.344	.185	
Watts required to maintain at 250°C Total	600	453	580	517	440	
" " " " " " Per sq in area	.374	.400	.395	.333	.283	
" " " " " " Per cu in vol	.126	.178	.155	.126	.107	



SECTION V

HYDRAULIC INVESTIGATIONS AND CONSTRUCTION

MEASUREMENT OF STREAM FLOW

The systematic measurement of stream flow was begun in 1912 and has been carried on continuously up to the present time. While this work has been under way for a comparatively short period, the results are extremely valuable in that they constitute the first attempt that has been made to ascertain with accuracy the flow characteristics of the important rivers of the Province. Records of this kind, extending over considerable periods of time, are absolutely indispensable in connection with working up schemes of hydraulic development, flood prevention and river improvement. These records are also exceedingly valuable in connection with the design and construction of bridges, and as a basis of study in connection with the classes of work above specified they should ultimately be the means of saving the Province from the recurrence of the immense losses which have hitherto been occasioned through flood damage and the improper design of dams and bridges. Work of this kind, being essentially of a preventative nature, must of necessity be carried out through a Governmental agency. Also, in the matter of hydraulic development, it is evident that no private enterprise can afford to spend four or five years collecting records of stream flow for the proper study of any specific scheme under consideration.

The scope of the stream measurement work has been gradually extended, until at the present time all the principal rivers in the south-western peninsula of the Province are under observation, as are also the rivers flowing into Georgian Bay and Lake Huron. Permanent metering stations have been established on the principal rivers in the Cobalt and Porcupine mining districts and are being extended westward along the line of the Transcontinental. The English and Winnipeg Rivers and their tributaries, and the rivers tributary to Rainy Lake, have been under observation for the past two years and a considerable amount of valuable data obtained, although the difficulty of obtaining gauge recorders in the unsettled districts, and the long distances to be covered by the field men, has made the collection of data a much slower process in this territory than is the case in other parts of the Province.

During the past summer metering stations were established on the principal streams tributary to Lake Ontario and the Ottawa River, and these rivers have been under continuous observation since that time. The stream flow investigations, therefore, cover all the important rivers of the Province, except the large boundary rivers and the rivers tributary to the north shore of Lake Superior. It is the intention, however, to bring the more important of the Lake Superior tributaries under observation as soon as possible.

Enamelled steel staff gauges have been set at all stations where good rating curves have been secured and where it was possible to obtain a gauge reader. Wherever possible, these gauges are read twice a day and the records sent to the district offices at the end of each week. At many of the stations it has been found impossible to eliminate the effects of back water, and wherever possible these stations have been abandoned and more favorable ones chosen. While this source

of error has thus been largely eliminated in the case of the stations on the northern rivers, it has been found impossible to altogether eliminate it in the case of several rivers in the south-western peninsula, principally on account of the large number of mill dams located upon the same. Furthermore, in the case of the Grand River, the operation of mill dams has made it impossible, during extreme low water periods, to obtain a true value of mean monthly discharge with two gauge readings per day. To eliminate this source of error, it would be necessary to install automatic recording gauges. It has not, however, been considered necessary to go to the expense of installing these gauges, because the investigations on the Grand River have primarily to do with flood prevention, and not power development, and it has so far been found possible to obtain reasonably accurate results by present methods for all but the extreme low stages of flow.

Details and tabulations covering all stream flow work up to December 31st, 1914, were published in the 1914 report of the Commission. Similar material appended hereto covers only the work of one year, from November 1st, 1914, to October 31st, 1915, and on account of the constantly increasing amount of data being obtained it is proposed in the future to include in the annual report the results of each succeeding twelve month period as above specified. This arbitrary adjustment of the annual period has been found necessary because the November and December data cannot be tabulated and properly adjusted for the effects of temperature and ice-cover before the report goes to press.

All discharge measurements were made with standard meters, and except where otherwise noted are accurate within a limit of five per cent. The rating curves from which the dsicharge tables were compiled are, in most cases, well defined, but in the case of certain streams, as noted in the tables, some revision of the tabled discharges may be necessary when further data on flood and winter discharge has been obtained and extra points fixed in the middle range of some of the rating curves.

There are now established a total of 74 metering stations and a total of 65 gauges, of which 50 are read twice daily, 14 read once a day, and 1 read intermittently. An effort is made to obtain at least one metering per month at all stations where the rating curve is not definitely established, and more frequent measurements are made when possible at all stations where rating data is lacking and where gauge recorders are not available.

POWER AND STORAGE SURVEYS

Niagara Power Development

During the summer of 1914 preliminary surveys were carried out in connection with a possible scheme of power development in the vicinity of Niagara Falls involving the use of the unallotted surplus of water available under the terms of the Boundary Waters Treaty and an effective head of not less than 300 feet. A preliminary cost estimate, based on these surveys, gave evidence of such good economic results that further surveys were begun in the spring of 1915 and are now practically completed. These surveys were carried out in great detail, and will furnish all the data necessary in connection with the preparation of detailed plans and the carrying on of construction.

The scheme of development involves the drawing of water from the Niagara River up the channel of Chippewa Creek to Montrose. From this point water will

be carried in an excavated canal to the crest of the escarpment a short distance above Queenston, from which point it will be carried into the gorge and used under an effective head of about 305 feet.

In the actual work of this survey is included:—

(*a*) A contour survey of the bed of the Niagara River off the mouth of Chippewa Creek, the establishment of directions of flow in the main stream by triangulation, and the measurement of discharge in the main stream for various distances from the shore up to 650 feet.

(*b*) The cross-sectioning and close contouring of the bed and shores of Chippewa Creek from the Niagara River to Montrose.

(*c*) The establishment of a chained base line and precise levelled bench marks between Montrose and Queenston.

(*d*) The close contouring by stadia of all the lands likely to be involved in the final location of the canal between Montrose and Queenston.

(*e*) Close interval cross-sections along the canal location as finally established.

(*f*) Core drill explorations along and in the vicinity of the proposed route of the canal. This exploration work involved about 1,786 lineal feet of drilling, some of the individual holes reaching depths of 112 to 330 feet. All cores obtained have been stored in boxes and carefully labelled for identification, so that the character of the sub-strata at any point along the canal route can be ascertained, with reasonable accuracy, by an inspection of these cores.

Various subsidiary surveys were also made to aid in studying the problem of spoil disposal and construction railways.

Saugeen River

This survey, begun in 1914, is now practically complete as regards field work. The work done on this scheme during 1914 gave evidence of much greater possibilities than had been anticipated, and the additional work done during the past summer will furnish all the information necessary for the future development of power on the Saugeen River in such a way as to vastly increase the economical value and importance of the recently completed development at Eugenia Falls.

Sand Island Falls

In response to a formal Resolution from the Town of Fort Frances, asking for the same, a detailed survey of the Sand Island Falls was made during the past summer, the object being to obtain the data necessary for investigating the economical possibility of developing this site for the use of the Municipality of Fort Frances and the surrounding district.

South Falls

As a result of an exhaustive preliminary investigation, the South Falls site on the south branch of the Muskoka River was decided upon as being the best source of power for the Municipality of Huntsville, which the Commission is under contract to supply with 800 h.p. This site had already been partially developed by the Town of Gravenhurst, and the problem consisted in re-modelling and increasing the capacity of this plant to meet the present demand for power in the district and to carry out the development in such a way as to provide for a future maximum installation of about 6,000 h.p. The necessary surveys were made and construction plans prepared in time to start construction work in September, 1915.

Cobden

In accordance with a Resolution forwarded by the Council of the Village of Cobden, a survey was made during December, 1914, of a power site in the vicinity of the village, with a view to ascertaining whether or not it could be utilized as a source of power for municipal and industrial requirements. A report based on the results of this survey, and appended hereto, was forwarded to the municipal authorities.

COBDEN

Development of Power

Authority

In accordance with a request contained in a Resolution of the Council of the Municipality of Cobden, a preliminary investigation was made of a small power site adjacent to the village and the report forwarded to the Clerk of the Municipality in June, 1914. While it was pointed out that the figures contained in this preliminary report were only approximate, the municipal authorities considered them sufficiently favorable to warrant further detailed investigation, and a second Resolution, dated July 7th, 1914, was forwarded to the Commission asking that detailed surveys be made for the purpose of ascertaining more definitely the merits of the development scheme and the costs involved in connection therewith. In compliance with this second Resolution, surveys were made in December, 1914, and on the basis of these surveys were compiled the estimates which will be found hereunder.

Market Conditions

The Village of Cobden is located on the main line of the C.P.R., and is an important shipping point for grain and live stock. A general survey of market conditions indicates that if the price of power is reasonable, a load of 100 to 150 h.p. is obtainable, of which a large proportion would be ten-hour industrial power.

Revision of Preliminary Report

The figures given in the estimates hereunder confirm all those of the preliminary report with the exception of one item, namely, the cost of storage. In the preliminary report the available area of lake storage was based on figures locally obtained, but the surveys show that the area of lake storage was greatly over-estimated. In order to provide the required storage capacity, it was necessary

to provide more money for land damages and for the cost of storage dam construction. This has resulted in a 10% increase in the total capital cost as estimated in the preliminary report. The annual costs contained in the preliminary report have also been increased by about $900 per annum, this increase being necessary partly on account of the increase in the interest, sinking fund and depreciation charges, but mainly because it was considered advisable to increase the operating costs to provide for the closer regulation of storage which will be necessary on account of the largely reduced volume which was found actually available as a result of the surveys.

Another reason for this increase in the annual costs is that the revised scheme of development involves the installation of one electrical unit only for full capacity of 150 h.p., instead of two separate units of 75 h.p. capacity each. Although the cost of power for loads under 100 h.p. will be greater, this change was considered advisable in view of the possibility of obtaining a 100 h.p. load immediately, and of the ultimate economy which will obtain when the total market is developed.

Location and Nature of Power Site

The proposed site of development is about three-quarters of a mile from the village on a small stream tributary to Muskrat Lake. The drainage area above the power site is contained principally in the Townships of Ross, Admaston, Bromley and Horton, having an area of about 28 square miles according to the best existing maps.

Facilities for artificial storage exist in Olmstead Lake and Edmonds Lake, which have a combined low water area of about 313 acres according to the township surveys. To provide the necessary volume of storage, a draft of six feet off these two lakes will be required, and it is proposed to obtain this draft by raising the water four feet above and drawing it down two feet below the level which existed during December, 1914. The depth of draft thus obtained, together with the local pondage available at the head works, will give a total volume of 96,400,000 cubic feet of storage. This volume of storage will deliver 11 second feet for 100 days, and should be sufficient to protect the plant during ordinary dry years. Assuming that the minimum flow of the stream during the three low summer months does not fall below 8 second feet, a total discharge of 19 second feet should be continuously available during any but abnormally dry years.

The power site itself has been previously developed, and is owned by Alex. McLaren, Esq., of Cobden. The plant has not been used for the last three years, but previous to that time was used to operate a flour mill using about 50 h.p.

Under the proposed scheme of development there will be about 48.5 feet of head available, and with the above estimated flow about 155 h.p. can be developed at 50% load factor.

In view of the nature of the load to be carried, it seems reasonably certain that the plant could carry a commercial load of 135 h.p. under all conditions, and that the installation of 150 h.p. capacity is justifiable.

Scheme of Development

The scheme of development involves, first, the purchase of approximately 64 acres of land about the margin of Olmstead Lake and Edmonds Lake. A timber crib storage dam designed to control six feet of draft is located at the outlet of Olmstead Lake. A certain amount of excavation will be necessary in the channel

of the stream below the storage dam to provide for the passage of water into the forebay pond under minimum draft conditions. The present dam will be utilized and a canal about 250 feet long excavated to the top of the hill above the power-house, where a head block is to be placed. To this head block will be connected a wood stave pipe 160 feet long which will be connected direct to the wheels in the power-house. The power-house will be located as at present, but instead of remodelling the present building it has been considered better economy to tear down the old structure and replace it by a new and properly designed building. In this building will be installed a 95 K.V.A., 2,200 volt, 3 phase, 60 cycle generator and exciter, with the necessary switching equipment. This generator will be direct connected to a horizontal double-runner turbine, hand controlled, and so designed that each runner can be operated separately in order that good hydraulic efficiencies may be obtained under low load conditions.

Estimate

The estimated cost of the plant above described is as follows:—

	Capital Cost.	Annual Cost.
Storage, including land damages, raising road, excavating channel and building dam	$1,997 00	$117 00
Canal and head block	1,172 00	50 00
Wood stave pipe	417 00	30 00
Power-house	1,610 00	30 00
Hydraulic machinery	2,100 00	105 00
Electrical equipment	2,204 00	108 00
	$9,500 00	$440 00
Engineering and contingencies 10%	950 00	.....
McLaren option	3,000 00	.....
Interest during construction	150 00	.....
Operation	.....	1,350 00
Sundries	.....	75 00
Insurance, 5%	.....	68 00
Sinking Fund, 1.8%—30 years	.....	244 80
Annual interest, 5%	.....	816 00
Grand Total	$13,600 00	$2,933 80

	Capital Cost.	Annual Cost.
Cost of 150 h.p. delivered to the switchboard	$ 91 00	$20 00
" " 135 h.p. " " "	100 00	22 20
" " 100 h.p. " " "	136 00	29 94

Distribution

It is important to note that the above prices are for power delivered at the switchboard of the plant, and do not cover the cost of distribution throughout the village. The cost of distribution will require to be added to the figures given above, but if 100 h.p. can be sold the ultimate price of power to the consumer should be sufficiently attractive to enable the municipality to connect up the bulk of the village load.

Toronto, February 18th, 1915.

POWER CONSTRUCTION

Wasdell's Falls

The Wasdell's Falls plant, located on the Severn River, has now been operating about fifteen months. This installation has been quite satisfactory under conditions of service.

Certain additions have been made to the equipment of the station during the past year. The winch on the main dam has been equipped with a motor to facilitate the handling of the stop logs. Also a motor-operated centrifugal pump has been installed in the pump chamber provided in the original layout to allow of unwatering the draft-tubes for inspection and repairs on turbines, runners and gates.

Eugenia Falls

This plant was completed in the fall of 1915, and was formally opened and placed in service on November 18th. A description of the development and the progress of construction was given in the report of the Commission for 1914. The work has since proceeded steadily, with no interruption or delay.

The station, when completely equipped, will have an installation of four units with an aggregate capacity of 8,000 electrical horsepower. Two units are installed at present. Foundations and superstructure are constructed only for the first two units, but the gate-house, tail-race and dams are completed for the full capacity.

The Ambursen Hydraulic Construction Company of Montreal, contractors for No. 1 dam, completed the work on December 22nd, 1914, and dismantled and removed their plant early in January, 1915.

The contract for No. 2 dam, the canal, flume line, excavation and headworks, which was handled by the Hyland Construction Company of Toronto, was completed on schedule time. The dressing and seeding of the earth slopes of the fills was done by the Commission in the spring. A good protective covering of alfalfa now protects the new fills, and as a result very little sliding, and practically no erosion, has occurred on the fills thus treated.

The wood stave pipe, which was furnished and erected by the Pacific Coast Pipe Company of Vancouver, B.C., was finished early in February. Under test this pipe has proven very satisfactory, and is practically watertight.

Some trouble was experienced by the contractors for the steel penstock, the Thor Iron Works of Toronto, in driving the 1¼ inch rivets in the heavier sections at the lower end. These difficulties were overcome, however, and the pipe was practically watertight under test, leakage being now entirely eliminated, with the exception of a small drip at the expansion joints.

The surge tank, fabricated and erected by the Canadian Allis-Chalmers Company of Toronto, was finished without undue trouble, and has given satisfactory results in test and operation. The wooden housing of the tank, placed for frost protection, also the housing on the steel penstock, were constructed by the Commission's own working staff.

Work on the power-house was completed early in the summer, and the installation of the electrical and hydraulic equipment was completed in October. A series of tests was then run on the various elements of the development to obtain the hydraulic and operating characteristics of the wood stave pipe, surge tank, penstock, turbines and auxiliary machinery.

By installing mercury manometers on the gallery of the surge tank, and a measuring weir in the tail-race, all the hydraulic data necessary in the above tests were obtained. It is gratifying to note that the results of the tests corroborated in every respect the assumptions and calculations made in connection with the design.

Since November 18th the plant has been in continuous commercial operation, and the results so far are such as to give every assurance of uninterrupted and efficient service.

South Falls

South Falls, on the south branch of the Muskoka River, was settled upon as being the best source of power for the Gravenhurst-Huntsville district. This site had been partially developed by the Town of Gravenhurst under a Provincial lease, and during the summer of 1915 the Commission carried on negotiations with the town, having in view the acquisition of full control of the water power in question. An agreement was finally arrived at whereby the Commission took over the power site, lands, leaseholds and all existing works on condition of assuming the outstanding balance of debenture charges against the property. This agreement was confirmed by by-law and actual construction work was started by the Commission early in September, 1915, and has since progressed continuously without interfering with the operation of the existing plant.

The work to be done at the plant consists in the remodelling of the forebay of the existing development, the installation of a wood stave pipe, a steel penstock and an additional hydraulic unit in the power-house. The present power-house building will also require to be extended to make room for the high-tension equipment and transformers.

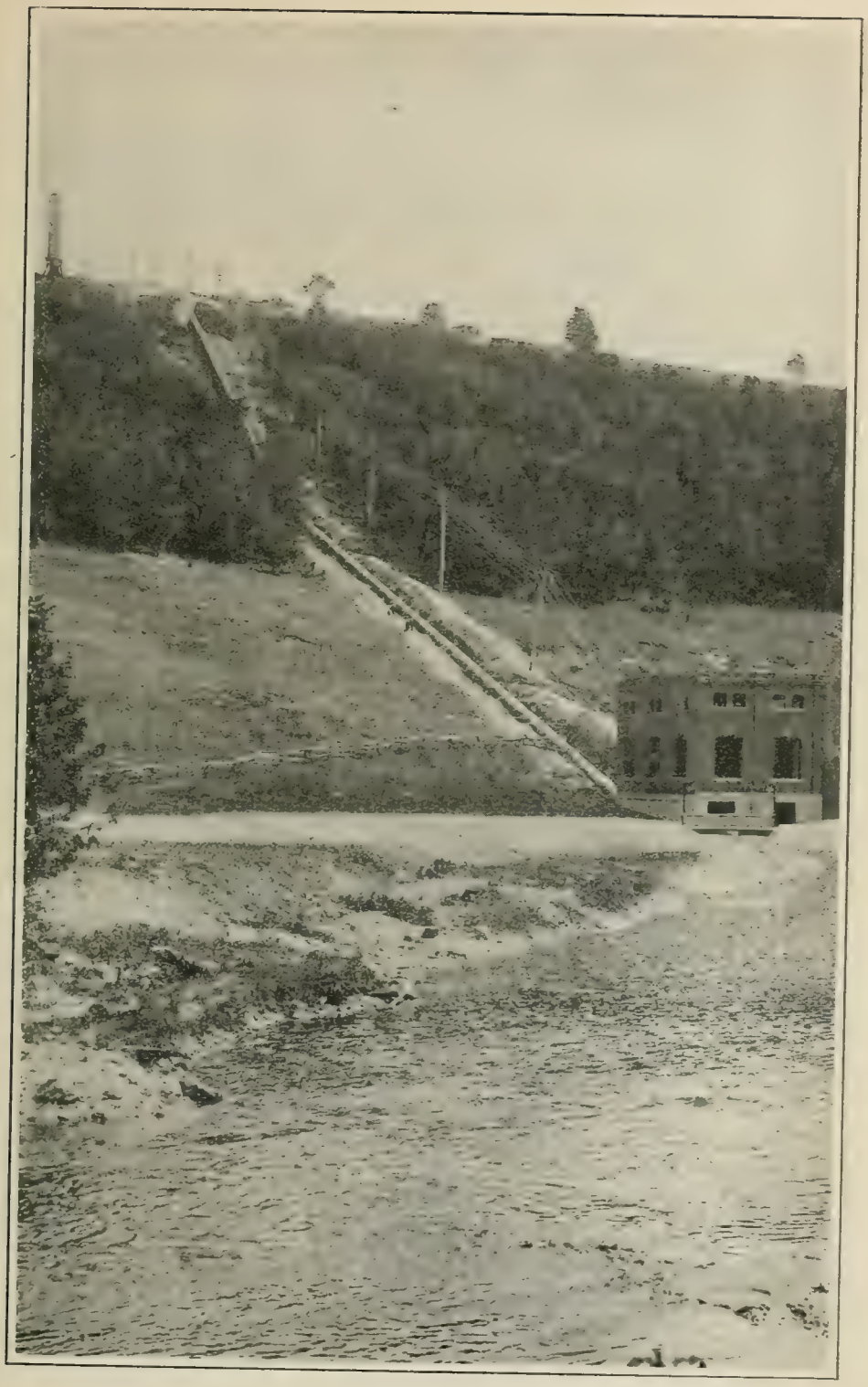
Tenders were called in August, 1915, for the furnishing of material for the construction of a wood stave pipe 60 inches in diameter and 970 feet long, and for the fabrication and erection of a steel penstock, head-gate mechanism and turbine complete. The Pacific Coast Pipe Company of Vancouver, B.C., received the contract for the wood stave pipe. This material has all been delivered on the ground, and the Commission's engineering staff will shortly proceed with the erection of the same.

The William Hamilton Company of Peterborough, received the contract for the head-gate mechanism, steel penstock and turbine. Delivery has already been made on the penstock, and erection will be proceeded with immediately. Delivery on the turbine equipment will be made early in January.

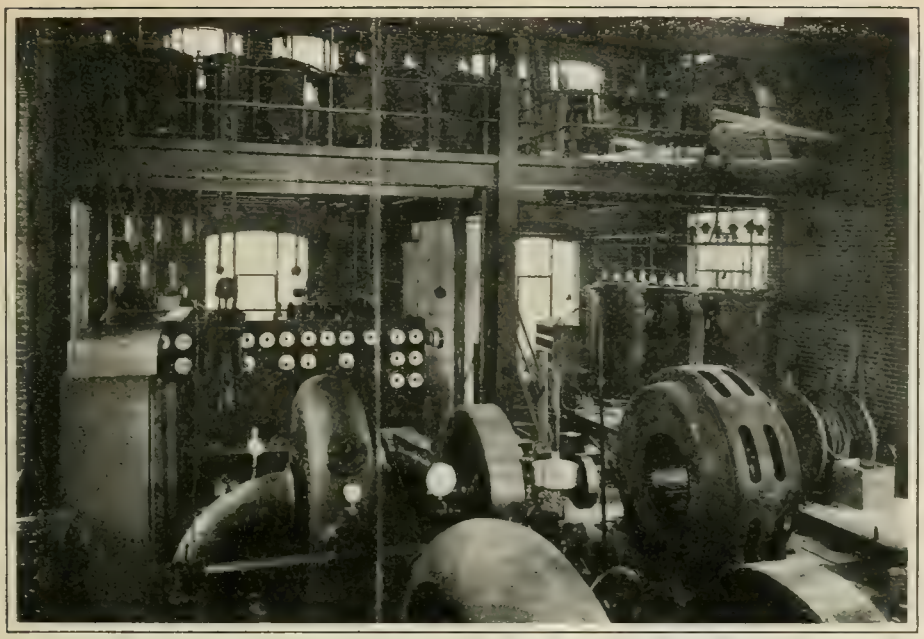
A permanent road has been built from the main highway to the power-house, and the grading for the wood stave pipe and steel penstock has been completed. The concrete anchors for the steel penstock have been poured. The excavation for the extension to the power-house and tail-race has been practically finished, and a start has been made on pouring the concrete in the sub-structure.

The new hydraulic unit consists of a butterfly entry valve, a single-runner Francis type turbine with globe casing and flywheel, and a pressure regulator. The capacity of the unit is 1,000 horsepower at 102 feet head, and 720 revolutions per minute.

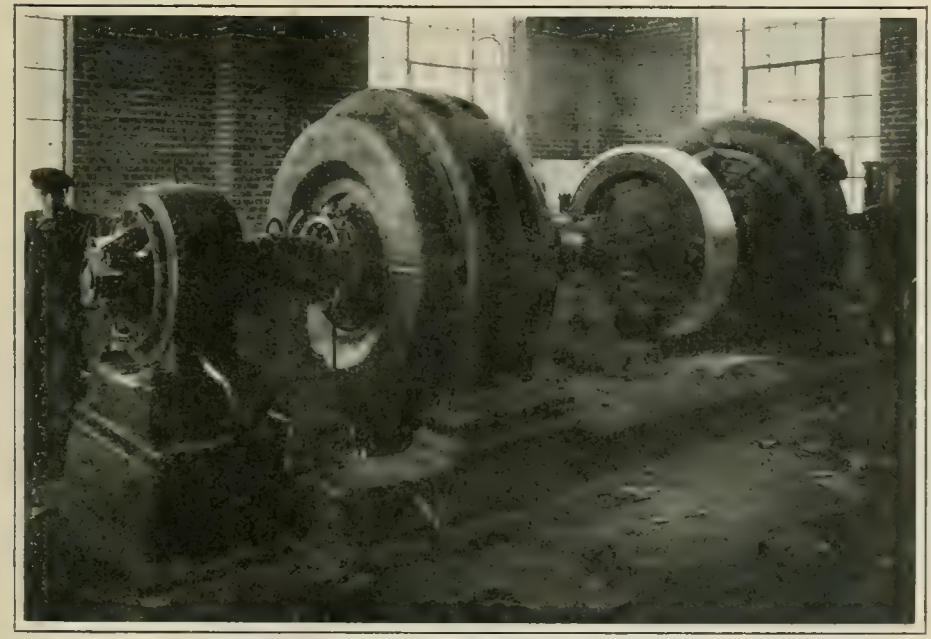
This will give a total capacity at the plant, including the present installed unit, of about 1,500 electrical horsepower. The development has been laid out in such a manner that a total capacity of 6,000 electrical horsepower, in three units, may be ultimately installed should the future market conditions make such action necessary.



Surge Tank, Penstock and Power House—Eugenia Falls Development



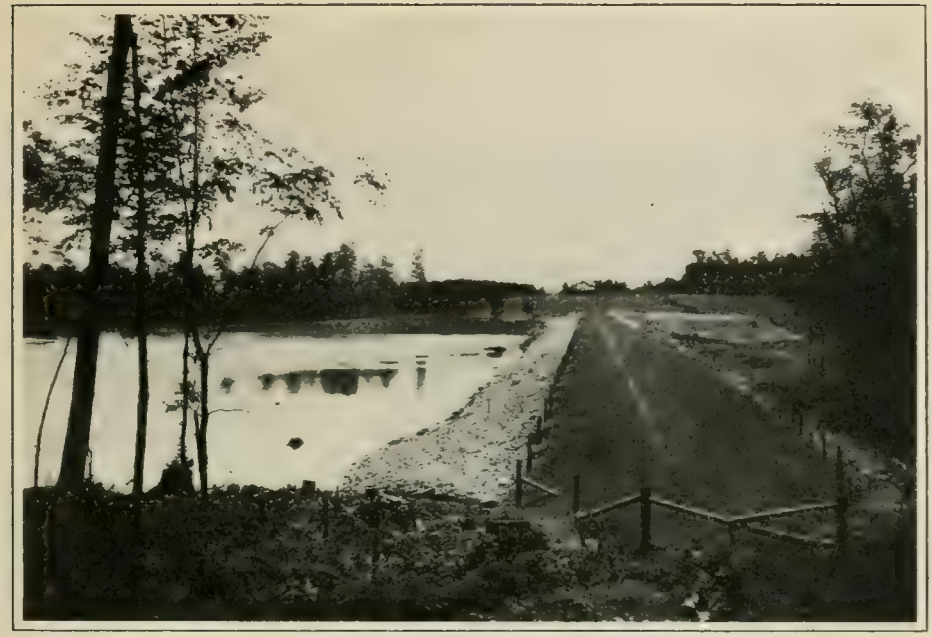
Eugenia Falls—Power House Interior During Erection of Hydraulic and Electrical Equipment



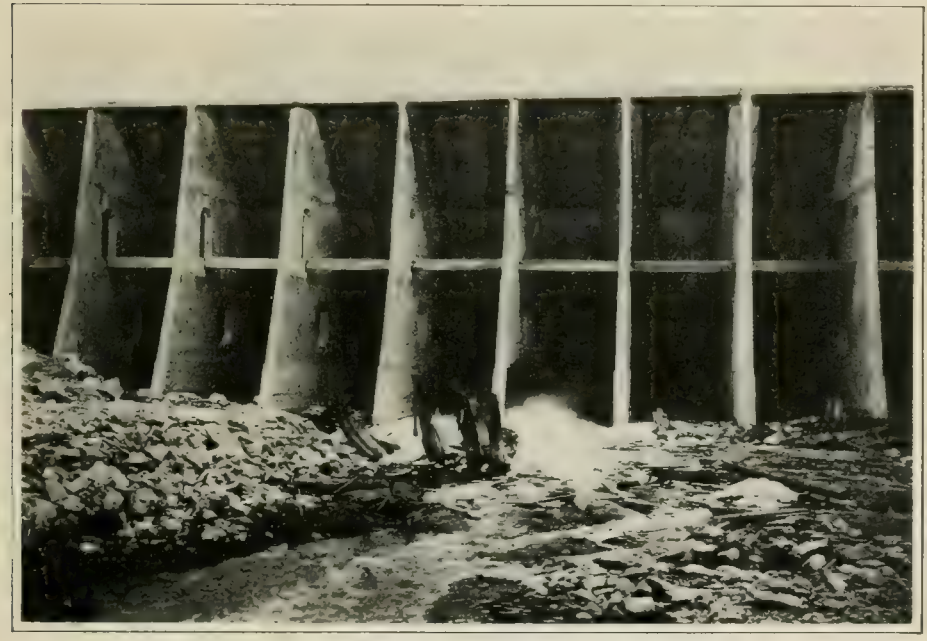
Eugenia Falls—Complete Main Unit and Exciter

Eugenia Falls—Surge Tank

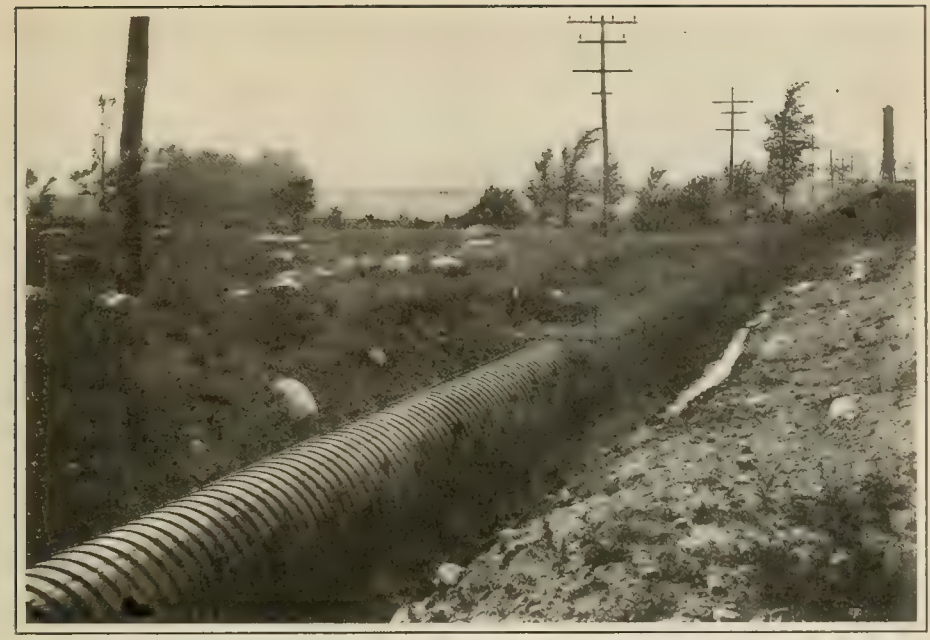
Eugenia Falls—Power House From Tail-Race



Eugenia Falls—No. 2 Earth-Fill Dam



Eugenia Falls—High Section (50 ft.) of No. 1 Dam, From the Down Stream Side



Eugenia Falls—Wood-Stave, Pipe-Line and Surge-Tank

Eugenia Falls—Main Forebay and Gate-House

STREAM FLOW DATA

Regular Stations

EASTERN ONTARIO DISTRICT

River	Location	Drainage Area Sq. Miles	Township	County or District
Bonnéchere	near Eganville	670	Wilberforce	Renfrew Co
"	near Golden Lake	575	South Algona	"
Madawaska	at Madawaska		Murchison	"
Mississippi	at Ferguson's Falls	1,042	Drummond	"
"	at Galetta	1,456	Fitzroy	Carleton Co
"	near Snow Road	446	Sherbrooke	Lanark Co
Moira	near Foxboro	1,038	Thurlow	Hastings Co
Napanee	near Napanee	300	Camden	Addington Co
Tay	near Glen Tay	204	Bathurst	Lanark Co
York	near Bancroft	374	Faraday	Hastings Co

Bonnechere River near Eganville

Location—400 feet downstream from McCrae's Power Plant, and one mile from the Village of Eganville, near lot 16, concession 6, Township of Wilberforce, County of Renfrew.

Records Available—Discharge measurements in September, 1916, and monthly thereafter. Gauge readings from September 24, 1915.

Drainage Area—670 square miles.

Gauge—A point on the rock bottom of the river from which direct readings are made to the water surface.

Channel and Control—The channel is slightly curved from the power house above and straight for ½ mile below the section. The bed of the river is shale, solid rock, and stones in some places. The banks are high, rocky and wooded, and not liable to overflow.

Discharge Measurements—Made by wading in section with the gauge at most stages, but frequently a few hundred yards further upstream at suitable low stages for better results.

Winter Flow—Likely the relation between gauge heights and discharge will be seriously disturbed during winter months.

Regulation—McCrae's plant and dam is a short distance above the section, and there is another dam at Eganville, and one between. The flow is further regulated by the operation of the Round Lake Dam and the lumber dams on tributary streams.

Accuracy—Good for open channel measurements.

Observer—H. Welk, Eganville.

Discharge Measurements of Bonnechere River near Eganville in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Sept. 23....	McLennan, C.C..	127	184	1.74	100.83	320	.....
Oct. 26....	" ..	122	110	1.12	100.27	123	.....
" 26....	" ..	55	60	2.49	100.40	151	.....

Daily Gauge Height and Discharge of Bonnechere River near Eganville for 1914-5

Drainage Area 670 Square Miles

Day	October		September		August		July		June		May		April		March		February		January		December		November	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	100.67	263																						
2	100.67	263																						
3	100.67	263																						
4	100.67	263																						
5	100.67	263																						
6	100.71	278																						
7	100.67	263																						
8	100.71	278																						
9	100.71	278																						
10	100.67	263																						
11	100.67	263																						
12	100.67	263																						
13	100.67	263																						
14	100.62	245																						
15	100.62	245																						
16	100.60	239																						
17	100.62	245																						
18	100.62	245																						
19	100.62	245																						
20	100.62	245																						
21	100.79	309																						
22	100.54	218																						
23	100.58	232																						
24	100.58	232	100.79	309																				
25	100.62	245	100.83	325																				
26	100.58	232	100.83	325																				
27	100.38	162	100.83	325																				
28	100.38	162	100.75	296																				
29	100.38	162	100.75	296																				
30	100.38	162	100.71	278																				
31	100.25	120																						

Monthly Discharge of Bonnechere River near Eganville for 1914-5

Drainage Area, 670 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	.....	.....	.....	.....	.....	.....	.....
December "	.....	.....	.....	.....	.....	.....	.....
January .. (1915)	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April.....	.....	.....	.....	.....	.....	.....	.....
May.....	.....	.....	.....	.....	.....	.....	.....
June.....	.....	.....	.....	.....	.....	.....	.....
July.....	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....
September 24–30.	325	278	308	.48	.41	.46	.12
October.....	309	120	239	.46	.18	.36	.42
The period	325	120	252	.48	.18	.38	.54

Bonnechere River near Golden Lake

Location—At the highway bridge between Golden Lake Station and Village, in the Township of South Algona, County of Renfrew.

Records Available—Discharge measurements made monthly from June, 1915. Daily gauge heights from June 26, 1915.

Drainage Area—575 square miles.

Gauge—Elevations of water surface made by indirect readings from a point on the bridge, whose elevation is checked monthly.

Channel and Control—Bays exist above and below the section, the current being very slow up to the bridge. The flow is confined between the abutments of the bridge at all stages. The bed of the river is well protected by large boulders, and is not subject to change.

Winter Flow—Seriously affected by ice.

Regulation—The flow is regulated to the capacity of the Round Lake Dam for storage purposes, and the lumber industry has flood dams on some of the tributary waters.

Accuracy—Mean of daily readings give good results for stage readings.

Observer—J. L. Foster, Golden Lake.

Discharge Measurements of Bonnechere River near Golden Lake in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
June 25....	McLennan, C. C.	112	325	1.26	555.94	411	.....
July 28....	" ..	107	239	0.67	555.26	161	.....
Aug. 25....	West, C. W	112	325	1.21	555.96	391	.....
Sept. 24....	McLennan, C. C.	109	293	1.14	555.76	331	.....
Oct. 26....	" ..	107	237	0.64	555.24	152	.....

Daily Gauge Height and Discharge of Bonnechere River near Golden Lake for 1914-5

Drainage Area, 575 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft*	*Feet*	*Sec-ft*
1																	555.82	357	555.12	112	556.02	427	555.46	231
2																	555.78	343	555.10	105	556.02	427	555.44	224
3																	555.80	350	555.10	105	556.00	420	555.45	228
4																	555.79	348	555.10	105	556.00	420	555.42	217
5																	555.84	364	555.12	112	555.99	416	555.42	217
6																	555.75	332	555.14	119	555.98	413	555.44	224
7																	555.70	315	555.16	126	555.98	413	555.46	231
8																	555.67	304	555.18	133	555.98	413	555.50	245
9																	555.64	294	555.20	140	555.96	406	555.52	252
10																	555.65	298	555.22	147	555.94	399	555.52	252
11																	555.61	284	555.28	168	555.92	392	555.50	245
12																	555.62	287	555.34	189	555.92	392	555.49	242
13																	555.60	280	555.38	203	555.90	385	555.47	234
14																	555.58	273	555.44	224	555.88	378	555.45	228
15																	555.55	262	555.45	228	555.88	378	555.42	217
16																	555.54	259	555.52	252	555.88	378	555.38	203
17																	555.52	252	555.55	262	555.90	385	555.34	189
18																	555.44	224	555.61	284	555.86	371	555.32	182
19																	555.41	214	555.64	294	555.84	364	555.30	175
20																	555.39	206	555.71	318	555.83	360	555.28	168
21																	555.37	200	555.76	332	555.84	364	555.26	161
22																	555.36	196	555.80	350	555.81	354	555.24	154
23																	555.34	189	555.83	360	555.77	340	555.23	150
24																	555.32	182	555.86	371	555.73	326	555.21	144
25																	555.30	175	555.90	385	555.70	315	555.18	133
26															555.96	406	555.28	168	555.92	392	555.65	298	555.16	126
27															555.96	406	555.27	164	555.92	392	555.61	284	555.15	122
28															555.94	399	555.25	158	555.94	399	555.58	273	555.14	119
29															555.92	392	555.23	150	555.96	406	555.52	252	555.12	112
30															555.88	378	555.19	136	555.98	413	555.50	245	555.10	105
31																	555.15	122	556.02	427			555.08	98

Monthly Discharge of Bonnechere River near Golden Lake for 1914-5

Drainage Area, 575 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)							
December							
January .. (1915)							
February							
March							
April							
May							
June 26-30	406	378	396	.71	.66	.69	.13
July	364	122	248	.63	.21	.43	.50
August	427	105	253	.74	.18	.44	.51
September	427	245	367	.74	.43	.64	.71
October	252	98	188	.44	.17	.33	.38
The period	427	98	268	.74	.17	.47	2.23

Madawaska River at Madawaska

Location—50 feet above the G.T. Ry. bridge, Canada Atlantic branch, 500 yards east of the Madawaska Station.

Records Available—Discharge measurements made in September, 1915, and monthly thereafter, and gauge readings from September 27, 1915.

Drainage Area—Not measured.

Gauge—Three feet of standard gauge plates secured vertically to pile three feet west of face of east abutment.

Channel and Control—Channel is straight for about 400 feet above the section, curving slightly to the right under the bridge. The banks are sandy, and not liable to overflow. The bed of the river is soft, and there are some weeds above the section. The point of control is not clearly defined.

Discharge Measurements—Made about fifty feet above gauge from a boat.

Winter Flow—Seriously affected by ice conditions.

Regulation—Lumber interests on the river above the section operate dams for driving purposes.

Accuracy—Open water rating curve for ordinary stages likely to be very good.

Observer—G. Wormke, Madawaska.

Discharge Measurements of Madawaska River at Madawaska in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Sept. 28....	McLennan, C. C.	78	480	0.62	102.00	296	.....
Oct. 28....	"	78	473	0.56	101.88	263	.....

Mississippi River at Ferguson's Falls

Location—At the highway bridge on the road through the Village of Ferguson's Falls, near lots 16 and 17, concession 12, Township of Drummond, County of Lanark.

Records Available—Discharge measurements from July, 1915, and gauge readings from July 13, 1915.

Drainage Area—1,042 square miles.

Gauge—0 to 6 feet of standard gauge plates secured to the inner face of the first pier from the south end of the bridge, and near the downstream corner of the pier.

Channel and Control—Channel is straight for 300 feet above and ½ mile below the gauging section. The banks are not liable to overflow. There are 7 channels, formed by the piers of the bridge. The present control is a short distance below the section, and ice action there will affect the discharge relation at low winter stages, but this will not be the point of control for high-water stages.

Winter Flow—Discharge relation will be affected by ice.

Regulation—The river is regulated throughout its length by power and storage dams, as well as dams in connection with the timber industry.

Accuracy—Open flow relation will be good.

Observer—A. M. Sheppard, Ferguson's Falls.

Discharge Measurements of Mississippi River at Ferguson's Falls in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
July 13....	McLennan, C. C..	263	259	1.92	101.38	498	.....
Aug 10....	" ..	201	259	2.01	101.40	521	.....
Sept. 14....	West, C. W	183	258	2.04	101.42	527	.....
Oct 15....	McLennan, C. C..	196	242	1.82	101.33	440	.....

Daily Gauge Height and Discharge of Mississippi River at Ferguson's Falls for 1914-5

Drainage Area, 1,042 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1																			101.06	251	101.67	726	101.29	429
2																			101.01	212	101.65	711	101.29	429
3																			101.00	204	101.56	641	101.31	445
4																			101.09	274	101.53	618	101.31	445
5																			101.18	343	101.52	610	101.34	468
6																			101.23	382	101.51	602	101.36	484
7																			101.25	398	101.56	641	101.38	499
8																			101.28	421	101.51	602	101.39	507
9																			101.32	453	101.52	610	101.38	499
10																			101.36	484	101.50	594	101.38	499
11																			101.40	515	101.46	562	101.36	484
12																			101.40	515	101.45	554	101.36	484
13																	101.38	499	101.40	515	101.44	546	101.34	468
14																	101.33	461	101.41	523	101.43	538	101.34	468
15																	101.28	421	101.43	538	101.41	523	101.33	461
16																	101.25	398	101.47	570	101.38	499	101.33	461
17																	101.22	374	101.52	610	101.38	499	101.33	461
18																	101.20	359	101.50	594	101.35	476	101.33	461
19																	101.21	367	101.49	586	101.33	461	101.33	461
20																	101.20	359	101.47	570	101.33	461	101.36	484
21																	101.19	351	101.46	562	101.33	461	101.39	507
22																	101.17	336	101.60	672	101.35	476	101.36	484
23																	101.15	320	101.67	726	101.34	468	101.35	476
24																	101.14	312	101.67	726	101.30	437	101.33	461
25																	101.10	282	101.70	749	101.29	429	101.33	461
26																	101.08	266	101.68	734	101.29	429	101.33	461
27																	101.08	266	101.61	680	101.33	461	101.32	453
28																	101.08	266	101.58	656	101.33	461	101.31	445
29																	101.11	289	101.55	633	101.32	453	101.31	445
30																	101.08	266	101.56	641	101.31	445	101.31	445
31																	101.08	266	101.59	664			101.28	421

Monthly Discharge of Mississippi River at Ferguson's Falls for 1914-5

Drainage Area 1,042 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November.(1914)							
December							
January...(1915)							
February							
March							
April							
May							
June							
July 13–31	499	266	340	.48	.25	.33	.23
August	749	204	529	.72	.20	.51	.59
September	726	429	516	.70	.41	.50	.58
October	507	429	466	.49	.41	.45	.52
The period	749	204	480	.72	.20	.46	1.92

Mississippi River at Galetta

Location—In the Village of Galetta, Township of Fitzroy, County of Carleton, about one hundred feet above, and parallel to the highway bridge over the river. It is only a few hundred yards below the dam and power house of the Galetta Power & Milling Company.

Records Available—Discharge measurements made monthly from June, 1915, and gauge readings twice a day from June 24, 1915.

Drainage Area—1,456 square miles.

Gauge—0 to 6 feet of standard enamelled plates secured to the left abutment of the highway bridge.

Channel and Control—Channel is straight for 200 feet above and below the section to a little rapid. The river bed is composed of gravel and stones, with solid rock on the right bank and gravel on the left bank. The point of control is through a solid rock formation a hundred and fifty yards below the section.

Discharge Measurements—Made by wading and from a boat held up to tag line by cable. Extreme high-water measurements may have to be made from the highway bridge.

Winter Flow—The winter conditions here will not seriously affect the gauge height and discharge relations.

Regulation—The river is subject to regulation throughout its entire length. In the headwaters are storage dams for power purposes, as well as timber dams for driving purposes.

Accuracy—Owing to the wet season the wasted water has been considerably more than would usually be the case. This season's relations between gauge height and discharge are likely better than those of the ordinary year.

Co-operation—Discharge measurements made at the bridge by the Department of Public Works of Canada.

Observer—J. P. Coyne, Galetta P.O.

Discharge Measurements of Mississippi River at Galetta in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
June 24....	McLennan, C. C..	90	148	3.71	244.54	551	.....
July 27....	" ..	61	103	3.07	243.86	317	.....
Aug. 24....	West, C. W.....	107	279	3.78	245.90	1,054	.....
Sept. 21....	McLennan, C. C.	60	97	3.18	243.74	309	.....
Oct. 23....	"	67	122	3.05	244.20	373	.....

Daily Gauge Height and Discharge of Mississippi River at Galetta for 1914-5

Drainage Area, 1,456 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1																	244.65	552	243.78	300	245.65	931	244.13	398
2																	244.70	569	243.74	289	245.49	862	244.07	377
3																	244.80	602	243.82	310	245.32	792	244.13	398
4																	244.82	610	243.82	310	245.20	746	244.11	390
5																	244.90	638	243.78	300	245.07	698	244.28	438
6																	245.28	776	243.82	310	244.90	638	244.44	486
7																	245.15	728	243.86	322	245.03	684	244.44	486
8																	245.03	684	243.86	322	245.11	713	244.49	501
9																	244.94	652	243.99	356	245.15	728	244.51	507
10																	244.99	669	244.28	438	245.07	698	244.32	450
11																	244.90	638	244.40	470	244.94	652	244.20	415
12																	244.82	610	244.40	470	244.82	610	244.28	438
13																	244.82	610	244.44	486	244.70	569	244.42	480
14																	244.74	583	244.65	552	244.65	552	244.44	486
15																	244.58	530	244.74	583	244.78	596	244.49	501
16																	244.53	513	244.74	583	244.78	596	244.32	450
17																	244.44	486	245.11	713	244.70	569	244.28	438
18																	244.28	438	245.24	761	244.65	552	244.24	427
19																	244.03	367	245.11	713	244.40	474	244.32	450
20																	244.11	390	245.07	698	243.99	356	244.30	444
21																	244.24	427	245.03	684	243.78	300	244.32	450
22																			244.15	401	245.40	824	243.65	266	244.28	438
23															244.57	526	244.11	390	245.86	1028	243.70	279	244.20	415
24															244.49	501	244.03	367	245.86	1028	243.82	310	244.13	398
25															244.51	507	243.94	342	245.99	1096	243.90	332	244.09	384
26															244.49	501	243.86	322	245.90	1047	233.86	322	244.26	438
27															244.40	474	243.74	289	245.74	971	243.86	322	244.38	468
28															244.34	456	243.82	310	245.49	862	244.24	427	244.32	450
29															244.57	526	243.90	332	245.40	824	244.11	390	244.36	462
30															244.74	583	243.86	322	245.40	824	244.11	390	244.32	450
31																	243.82	310	245.70	953			244.15	401

Monthly Discharge of Mississippi River at Galetta for 1914-5

Drainage Area, 1,456 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November ,(1914)							
December. "							
January ..(1915)							
February							
March							
April							
May							
June 23-30	583	456	509	.40	.31	.35	.10
July	776	289	498	.53	.20	.34	.39
August	1,096	289	627	.75	.20	.43	.50
September	931	266	545	.64	.18	.38	.42
October	507	377	442	.35	.26	.30	.35
The period	1,096	266	527	.75	.18	.36	1.76

Mississippi River near Snow Road

Location—At the highway bridge about two miles below the Village of Snow Road, Township of Sherbrooke, County of Lanark.

Records Available—Discharge measurements made monthly from July, 1915, and gauge readings on week days since July 30, 1915.

Drainage Area—496 square miles.

Gauge—0 to 6 ft. of standard gauge plates secured vertically to the downstream side of the left abutment of the highway bridge. The elevation of the zero on gauge is assumed as 100.00.

Channel and Control—The channel approaches and leaves the section at a slight angle. The banks are high, and are not liable to overflow. The bridge pier forms two channels at the gauging section. Earth, rocks and gravel in the river bed, not shifting. Control for ordinary stages not well defined. At very high water stages the point of control is probably the head of the rapids just above High Falls.

Discharge Measurements—Measurements made from bridge at all stages.

Winter Flow—Discharge relation seriously affected by ice.

Regulation—The power and lumber companies operating on this river have storage dams above this point on the river.

Accuracy—No Sunday readings have been secured by gauge-readers, but the fluctuation in stage is slow, and the open-water relation should be good.

Observer—Fred. Jackson, Snow Road.

Discharge Measurements of Mississippi River near Snow Road in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
July 30....	McLennan, C. C..	57	310	0.61	101.83	190	.....
Aug. 26....	West, C. W	70	345	1.04	102.44	357	.....
Sept. 29....	McLennan, C. C..	57	333	0.93	102.25	309	.....
Oct. 25....	" ..	57	327	0.92	102.17	302	.....

Daily Gauge Height and Discharge of Mississippi River near Snow Road for 1914-5

Drainage Area, 446 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec ft.	Feet	Sec-ft	Feet	Sec-ft.
1																			101.83	190	102.54	397	102.23	302
2																			101.83	190	102.50	384	102.25	308
3																			101.83	190	102.50	384	.....	308
4																			102.08	258	102.46	372	102.25	308
5																			102.17	284	.....	365	102.25	308
6																			102.25	308	102.42	359	102.31	326
7																			102.25	308	102.44	365	102.29	320
8																			.....	296	102.42	359	102.27	314
9																			102.17	284	102.40	353	102.27	314
10																			102.17	284	102.38	347	.....	308
11																			102.17	284	102.35	338	102.23	302
12																			102.17	284	.....	323	102.23	302
13																			102.17	284	102.25	308	102.23	302
14																			102.23	302	102.25	308	102.23	302
15																			.....	299	102.27	314	102.23	302
16																			102.21	296	102.29	320	102.23	302
17																			102.33	332	102.27	314	.....	302
18																			102.29	320	102.25	308	102.23	302
19																			.....	314	.....	308	102.23	302
20																			102.25	308	102.25	308	102.25	308
21																			102.29	320	102.23	302	102.25	308
22																			.....	352	102.23	302	102.23	302
23																			102.50	384	102.23	302	102.23	302
24																			102.48	378	102.23	302	.....	293
25																			102.44	365	102.23	302	102.17	284
26																			102.42	359	.....	305	102.17	284
27																			102.40	353	102.25	308	102.15	278
28																			102.44	365	102.25	308	102.15	278
29																			.....	375	102.25	308	102.12	270
30																	101.83	190	102.50	384	102.25	308	102.12	270
31																	101.83	190	102.54	397	.....	.....	.....	.....

Monthly Discharge of Mississippi River near Snow Road for 1914-5

Drainage Area, 446 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)							
December							
January (1915)							
February							
March							
April							
May							
June							
July							
August	397	190	311	.89	.43	.70	.81
September	397	302	329	.89	.68	.74	.83
October	326	270	299	.73	.61	.67	.77
The period	397	190	313	.89	.43	.70	2.41

Moira River near Foxboro

Location—Three hundred feet above G.T.R. Crossing, and six hundred feet east of Foxboro Station, on the G.T.R.-Belleville, Peterboro Branch. Near Lot 5, Concession VI, Township of Thurlow, County of Hastings.

Records Available—Monthly discharge measurements from September, 1915, and gauge readings from October 12, 1915.

Drainage Area—1,038 square miles.

Gauge—Three points on the bed of the river, about 50 feet above the section have been selected from which the elevation of the water surface is measured twice daily. One of these points is used at a time, according to the stage of the river.

Channel and Control—At one side of the river at the section are boulders and rocks, but the rest of the section is smooth, solid rock, liable to no movement at all. The control is only a few feet below the section and is not likely to freeze over in winter except for short periods of time.

Discharge Measurements—At ordinary stages the measurements are made by wading, at tag line.

Winter Flow—The relation of gauge height to discharge will be affected by ice, but likely in a fairly uniform manner throughout the winter.

Regulation—The river above the section has dams in many places besides the regulation for the lumber interest, on different tributary lakes and streams.

Accuracy—Open water relation will be good.

Observer—C. Stewart, Foxboro P.O.

Discharge Measurements of Moira River near Foxboro in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Sept 9.....	West, C. W.....	164	253	1.76	322.21	446	.45
Oct. 12	McLennan, C. C.	164	229	1.58	322.21	363	.35

Napanee River near Napanee

Location—At Mink's Bridge, three miles from Napanee, near lot 1, concession 1, Township of Camden, County of Addington.

Records Available—Discharge measurements made monthly from August, 1915, and gauge readings from September 8, 1915.

Drainage Area—300 square miles.

Gauge—Standard gauge plates 0 to 6 ft. firmly secured to a 4 x 4 in. pine driven in river bottom and spiked and wired to one of three elms in one cluster on the right bank 400 ft. above the bridge and section.

Channel and Control—The channel is curved above the section to within 20 feet of the bridge, and is straight for 300 feet below. The right bank is high, while the left is comparatively low and liable to overflow. The bed of the stream is composed of rocks and gravel, not likely to shift.

Discharge Measurements—Made by wading at low stages and from bridge at high stages.

Winter Flow—Relation of gauge height to discharge is affected by ice.

Regulation—There are several power developments on the upper part of the river, and also lumber dams on tributary waters.

Accuracy—Two daily readings give good mean daily gauge heights.

Observer—Mrs. Dan. O'Shaughnessy, Napanee.

Discharge Measurements of Napanee River near Napanee in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Aug. 16....	McLennan, C. C.	64	106	1.43	102.27	153	.51
Sept. 8....	West, C.W	60	62	1.11	101.58	69	.23
Oct. 8....	McLennan, C. C.	64	87	1.42	101.98	124	.41

Tay River near Glen Tay

Location—Near lots 20 and 21, concession 11, Township of Bathurst, County of Lanark. At the highway bridge north of the Village of Glen Tay, and east of the auxiliary plant of the Canadian Electric & Water Company, Limited, of Perth and Ottawa.

Records Available—Discharge measurements made July, 1915, and monthly thereafter, and gauge readings from July 10, 1915.

Drainage Area—204 square miles.

Gauge—Vertical steel staff 0 to 3 feet fastened to the pier of bridge one foot above section.

Channel and Control—The channel is straight from the dam 150 feet above and straight for 250 feet below the section. The banks are high, and not liable to overflow. The bed of the river is composed of shale and stones, not shifting. The flow is confined between the bridge abutments at all stages. The control is a short distance below the section, and the flood flow is likely to disturb it to some extent.

Discharge Measurements—Made by wading at ordinary stages, and from the bridge at very high stages.

Winter Flow—Channel at section likely free from ice during winter, but will be affected by ice formation below the section.

Regulation—The river is dammed immediately above the section and one mile further up, for power purposes, and the Department of Railways and Canals operate a dam at the foot of Bob's Lake for regulating canal purposes.

Accuracy—The open-water rating will be very good.

Observer—Paul Griffin, Marion P.O.

Discharge Measurements of Tay River near Glen Tay in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
July 10....	McLennan, C. C..	43	35	1.09	93.84	38	.....
Aug. 11....	"	41	39	1.30	93.96	51	.....
Sept. 14....	West, C. W	43	35	1.25	93.84	43	.....
Oct. 14....	McLennan, C. C.	42	30	1.00	93.71	31	.....

Daily Gauge Height and Discharge of Tay River near Glen Tay for 1914-5

Drainage Area, 204 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.75	34	94.42	102	93.82	41
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.75	34	94.17	79	94.05	66
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.75	34	94.17	79	94.03	64
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.75	34	94.38	98	94.05	66
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.78	37	94.13	75	94.05	66
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.82	41	94.13	75	94.03	64
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.86	45	94.07	68	93.98	58
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.96	56	94.09	70	93.98	58
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	94.01	62	94.13	75	93.71	30
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.96	56	94.01	62	94.09	70	93.71	30
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.96	56	93.98	58	94.09	70	93.98	58
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.86	45	93.96	56	94.09	70	93.98	58
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.82	41	94.17	79	94.11	72	93.98	58
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.80	39	94.01	62	94.07	68	93.71	30
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.80	39	94.17	79	94.07	68	93.98	58
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.80	39	93.92	52	94.05	66	93.96	56
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.80	39	94.01	62	94.07	68	93.94	54
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.80	39	94.13	75	94.09	70	93.94	54
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.82	41	94.13	75	94.11	72	92·94	54
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.84	43	94.17	79	94.09	70	93.98	58
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.84	43	94.17	79	94.05	66	93.98	58
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.86	45	94.07	68	94.05	66	93.94	54
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.84	43	94.34	94	94.05	66	93.94	54
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.80	39	94.63	131	94.05	66	93.92	52
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.80	39	94.38	98	94.05	66	93.94	54
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.80	39	94.34	94	94.01	62	93.94	54
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.80	39	94.51	114	94.07	68	93.94	54
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.80	39	94.46	108	94.13	75	93.96	56
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.80	39	94.17	79	94.09	70	93.96	56
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.80	39	94.21	83	94.05	66	93.94	56
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93.77	36	94.05	66	.....	.....	94.30	91

Monthly Discharge of Tay River near Glen Tay for 1914-5

Drainage Area 204 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)							
December							
January (1915)							
February							
March							
April							
May							
June							
July 10–31	56	36	42	.27	.18	.21	.17
August	131	34	69	.64	.17	.34	.39
September	102	62	72	.50	.30	.35	.39
October	91	30	55	.45	.15	.27	.31
The period	131	30	62	.64	.15	.30	1.26

York River near Bancroft

Location—At the highway bridge one and a half miles below Bancroft, near lots 53 and 54, west of the Hastings Road, Township of Faraday, County of Hastings.

Records Available—Discharge measurements made monthly from July, 1915. Daily gauge heights from July 16, 1915.

Drainage Area—374 square miles.

Gauge—Vertical standard gauge plates 0 to 6 ft. secured on the upstream face of the right bridge pier near the west corner.

Channel and Control—The channel is straight for 400 feet above and 250 feet below the section. The banks are high and sandy, not liable to overflow. The bed is composed of gravel. Flow takes place in two channels under the bridge at high stages, and in one channel at lower stages.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—Ice will materially affect the open-water relation of gauge heights to discharge.

Regulation—The dam at Bancroft gives very small storage, and the plants there do not use the entire flow. On account of the electrical plant working at night, and the other mills during the day, daily gauge readings give fairly accurate figures for the mean daily stage. Some of the tributary streams are controlled by dams for storage and driving purposes for the lumber industry.

Accuracy—As the river bed is composed of gravel, slight movement no doubt takes place without changing the general profile and section.

Observer—J. L. Churcher, Bancroft.

Discharge Measurements of York River near Bancroft in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
July 16....	McLennan, C. C.	77	229	1.30	101.62	297	.....
Aug. 13....	"	77	224	1.11	101.50	247	.....
Sept. 10....	West, C. W.....	77	217	1.24	101.42	269	.....
Oct. 13....	McLennan, C. C.	76	212	1.16	101.35	246	.....

Daily Gauge Height and Discharge of York River near Bancroft for 1914-5

Drainage Area, 374 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1																			101.34	246	101.56	286	101.34	246
2																			101.29	237	101.59	292	101.36	250
3																			101.29	237	101.55	284	101.28	235
4																			101.43	263	101.56	286	101.56	286
5																			101.54	282	101.52	279	101.60	294
6																			101.53	281	101.50	275	101.46	268
7																			101.57	288	101.47	270	101.27	233
8																			101.53	281	101.44	265	101.51	277
9																			101.62	297	101.46	268	101.67	307
10																			101.58	290	101.50	275	101.83	336
11																			101.52	279	101.54	282	101.50	275
12																			101.55	284	101.46	268	101.41	259
13																			101.57	288	101.46	268	101.33	244
14																			101.57	288	101.51	277	101.39	255
15																			101.51	277	101.52	279	101.40	257
16																	101.64	301	101.57	288	101.51	277	101.39	255
17																	101.58	290	101.60	294	101.12	205	101.39	255
18																	101.55	284	101.58	290	101.42	261	101.36	250
19																	101.49	274	101.54	282	101.43	263	101.38	253
20																	101.49	274	101.54	282	101.40	257	101.38	253
21																	101.50	275	101.56	286	101.48	272	101.38	253
22																	101.50	275	101.47	270	101.41	259	101.38	253
23																	101.49	274	101.56	286	101.45	267	101.38	253
24																	101.48	272	101.61	295	101.50	275	101.31	240
25																	101.48	272	101.69	310	101.42	261	101.35	248
26																	101.46	268	102.04	375	101.38	253	101.35	248
27																	101.41	259	102.06	379	101.43	263	101.33	244
28																	101.32	242	102.00	368	101.50	275	101.34	246
29																	101.29	237	101.77	325	101.40	257	101.33	244
30																	101.28	235	101.67	307	101.42	261	101.32	242
31																	101.29	237	101.70	312			101.27	233

Monthly Discharge of York River near Bancroft for 1914-5

Drainage Area, 374 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)							
December "							
January .. (1915)							
February							
March							
April							
May							
June							
July 16–31	301	235	267	.81	.63	.71	.42
August	379	237	293	1.01	.63	.78	.90
September	292	205	269	.78	.55	.72	.80
October	336	233	258	.90	.62	.69	.80
The period	379	205	272	1.01	.55	.73	2.92

Regular Stations

NORTHERN ONTARIO DISTRICT

River	Location	Drainage Area Sq. Miles	Township	County or District
aux Sables	at Massey	524	Salter	Sudbury Dist.
Blanche	near Englehart	230	Evanturel	Timiskaming Dist.
Frederickhouse	at Frederickhouse	1,252	Clute	" "
Kabuskong	at Bonfield	67	Bonfield	Nipissing Dist.
Kagawong	at Kagawong	94	Allan	Manitoulin Island.
Maganetawan, North.	near Burk's Falls	107	Armour	Parry Sound Dist.
" South.	" " "	257	"	" "
Mississagi	at Mississagi	3,650	Mississagi Indian Reserve	Algoma Dist.
Montreal	at Latchford	2,450	Coleman	Timiskaming Dist.
Muskoka, N. Branch.	near Port Sydney	560	Stephenson	Muskoka Dist.
Muskoka, S. Branch.	at Tretheway's Falls	668	Draper	" "
Seguin	near Parry Sound	380	McDougal	Parry Sound Dist.
South	near Powassan	305	Himsworth	Parry Sound Dist.
Spanish	at Espanola	4,490	Merritt	Sudbury Dist.
Sturgeon	at Smoky Falls	2,250	Field	Nipissing District.
Vermilion	near Whitefish	1,580	Graham	Sudbury Dist
Wanapitei	near Wanapitei	940	Dryden	" "

aux Sables River at Massey

Location—About 800 feet upstream from C.P. Ry. bridge, and ¼ mile north-east of railway station, in the Village of Massey, Township of Salter, Sudbury District.

Records Available—Monthly discharge measurements from July to October, 1915. Daily gauge heights from June 10 to October 31, 1915.

Drainage Area—524 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, fastened to rock on left shore 400 feet above railway bridge. Zero of the gauge (elev. 15.00 feet) is referred to bench mark (elev. 29.76 feet) painted on top of rock near gauge.

Channel and Control—Straight for 1,000 feet above and 500 feet below the gauging station to a rapid. Both banks are high, rocky, wooded and are not liable to overflow. The bed of the stream is composed of clay and gravel, practically permanent. The velocity is moderate, and one channel exists at all stages.

Discharge Measurements—Made by wading during low water periods. At high stages measurements are made from boat with a Price current meter.

Regulation—The operation of logging dams above cause fluctuations in gauge heights during the log-driving season.

Observer—Jas. Blight, Massey.

Discharge Measurements of aux Sables River at Massey in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
July 15....	Murray, W. S..	44	117	2.53	17.43	297(a)	.....
Aug. 14....	" ..	63	106	2.99	17.08	318	.....
Sept. 1....	" ..	39	55	2.36	15.33	131	.....

(a) Measurement taken from raft 400 feet below regular section

Daily Gauge Height and Discharge of aux Sables River at Massey for 1914-5

Drainage Area, 524 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1																	26.92	2800	16.04	184	15.33	131	19.75	647
2																	24.50	2025	16.00	181	15.33	131	19.33	575
3																	23.50	1705	16.00	181	15.33	131	18.95	516
4																	19.25	562	15.91	174	15.33	131	19.04	529
5																	19.50	603	15.91	174	15.25	125	19.62	624
6																	19.58	616	15.83	167	15.25	125	20.16	723
7																	19.50	603	15.75	161	15.25	125	20.16	723
8																	19.50	603	17.41	312	15.25	125	19.87	669
9																	19.33	575	17.79	357	15.25	125	19.62	623
10															26.00	2505	19.25	562	17.50	322	15.25	125	19.41	588
11															23.92	1840	19.17	549	17.37	308	15.25	125	19.20	554
12															24.25	1945	18.75	485	17.25	295	15.25	125	19.62	623
13															21.71	1135	18.33	426	17.25	295	15.25	125	19.58	617
14															26.13	2550	18.33	426	17.25	295	15.25	125	19.50	603
15															24.09	1895	17.75	352	17.25	295	15.33	131	19.37	581
16															23.58	1730	17.17	287	17.12	282	15.37	134	19.66	630
17															23.20	1610	17.13	283	16.96	266	15.45	140	19.37	581
18															24.34	1975	17.12	282	16.83	253	15.54	146	19.33	575
19															23.70	1770	17.12	282	16.75	245	15.58	149	20.33	756
20															21.54	1080	16.92	262	16.54	226	15.83	167	20.20	730
21															25.83	2450	16.79	249	16.37	210	16.04	184	19.87	670
22															24.08	1890	16.75	245	16.16	194	16.20	197	19.54	609
23															25.66	2395	16.67	237	16.12	191	16.29	204	18.95	516
24															24.34	1975	16.62	232	15.99	180	16.33	209	18.99	522
25															24.04	1890	16.50	232	15.87	171	16.41	214	18.58	461
26															23.42	1680	16.42	215	15.70	157	20.91	894	18.33	426
27															21.09	945	16.38	211	15.67	155	22.50	1386	18.20	409
28															23.92	2480	16.29	204	15.62	151	21.50	1066	18.04	388
29															26.04	2520	16.21	198	15.45	140	20.75	852	18.12	399
30															26.42	2640	16.17	195	15.45	140	20.33	756	18.00	383
31																	16.12	191	15.41	137			18.12	399

Monthly Discharge of aux Sables River at Massey for 1914-5

Drainage Area 524 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)							
December "							
January .. (1915)							
February							
March							
April							
May							
June 10–30	2,640	945	1,947	5.04	1.80	3.72	2.00
July	2,800	191	538	5.34	.36	1.03	1.19
August	357	137	219	.68	.26	.42	.48
September	1,386	125	287	2.64	.24	.55	.61
October	756	383	569	1.44	.76	1.09	1.26
The period	2,800	125	521	5.34	.24	.99	6.44

Blanche River near Englehart

Location—At the highway bridge near the High Falls, 3½ miles northwe t of the Town of Englehart, north half of lot 12, concession 3, Township of Evanturel, Temiskaming District.

Records Available—Monthly discharge measurements, August, 1914, to October, 1915. Daily gauge heights, October 8, 1914, to October 31, 1915.

Drainage Area—430 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, and located on the southwest corner of the wing wall of the bridge. The zero on the gauge (elev. 10.00) is referred to a bench mark (elev. 23.39), painted on a prominent rock on the right bank, 75 feet below the bridge.

Channel—At a point 200 feet above the station, the river curves from the right and then flows straight, up to a point 700 feet below the station. Both banks are high, rocky, wooded, and will not overflow. The bed of the stream is composed of clay, practically permanent. The current is very slow, flowing through 2 channels at low stages and 3 channels during high water periods.

Discharge Measurements—Made from the highway bridge with a Price current meter.

Regulation—A temporary dam is built above the station during the summer months. This dam is used for storing water during the period when the river is used for log driving. The gauge heights at the section are therefore affected during the storage and log driving periods.

Winter Flow—During the winter months measurements are made through the ice to determine the winter discharge. The relation of gauge height to discharge is seriously affected by ice.

Accuracy—Rating curve fairly well defined between gauge heights 10.50 feet and 12.00 feet.

Observer—W. Antram, Englehart.

Discharge Measurements of Blanche River near Englehart in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 9....	Murray, W. S..	40	220	0.40	10.50	90(a)	.....
Feb. 15....	" ..	55	369	0.24	10.56	89(b)	.....
Mar. 15....	" ..	60	402	0.21	10.75	83(c)	.....
May 10....	" ..	111	1,041	1.22	14.33	1,273(d)	.....
June 3....	" ..	66	646	0.55	10.91	353	.....
July 9....	" ..	106	780	0.98	12.25	766(d)	.....
Aug. 4....	" ..	66	617	0.44	10.56	275	.....
Sept. 22....	" ..	66	614	0.47	10.52	291	.....
Oct. 22....	" ..	111	754	0.90	12.00	685	.....

(a) Ice measurement 300 feet below regular station.
(b) Ice " 250 " "
(c) Measurement 250 feet below regular section, slush ice on control.
(d) Logs on control.

Daily Gauge Height and Discharge of Blanche River near Englehart for 1914-5

Drainage Area, 430 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	10.75	325	10.42	140	10.50	125	10.58	120	10.67	140	11.08	420	14.00	1290	11.50	540	11.42	520	11.50	540	10.91	370	10.91	370
2	10.67	305	10.58	180	10.33	125	10.42	120	10.67	140	11.08	420	14.00	1290	11.25	465	11.67	590	11.42	520	10.91	370	10.83	350
3	10.75	305	11.00	250	10.58	125	10.42	120	10.58	140	11.08	420	14.67	1470	11.25	465	11.83	640	11.42	520	10.83	350	10.75	325
4	10.83	300	11.00	250	10.42	130	10.42	120	10.67	145	10.92	375	14.75	1515	11.00	395	11.75	615	10.58	280	10.83	350	10.83	350
5	10.83	290	10.83	230	10.50	150	10.42	120	10.67	145	10.92	375	14.50	1440	10.83	350	11.92	665	10.58	280	10.83	350	10.91	370
6	10.92	280	10.83	200	10.58	190	10.50	120	10.75	150	11.08	420	14.00	1290	11.00	395	12.08	715	10.67	305	10.75	325	10.58	280
7	10.83	260	10.75	160	10.92	210	10.50	120	10.75	160	11.25	465	14.67	1470	11.00	396	12.50	840	10.75	325	10.91	370	11.00	395
8	10.92	240	10.75	150	10.83	150	10.50	120	10.75	190	11.08	420	14.67	1470	10.92	375	12.33	790	10.75	325	10.92	375	11.00	395
9	10.83	220	10.75	130	10.50	130	10.42	130	11.25	270	11.17	445	15.00	1590	11.00	395	12.42	815	10.83	350	10.83	350	10.91	370
10	10.75	200	10.50	130	10.58	120	10.50	150	11.25	270	11.25	465	14.67	1470	10.92	375	12.25	765	10.75	325	10.83	350	11.00	395
11	10.83	185	10.33	125	10.67	140	10.75	160	11.17	250	13.33	1090	14.83	1540	10.92	375	12.25	765	10.67	305	10.75	325	11.16	440
12	10.83	180	10.58	125	10.75	160	10.75	165	10.92	210	12.50	840	14.67	1470	12.08	715	12.08	715	10.67	305	10.75	325	11.25	465
13	10.58	180	10.67	125	10.75	160	10.75	160	10.92	180	11.58	565	14.25	1365	12.17	740	11.92	665	10.58	280	10.91	370	11.50	540
14	10.67	190	10.67	125	10.75	170	10.67	150	10.75	160	11.92	665	13.58	1465	12.00	690	11.92	665	10.58	280	11.16	440	11.25	465
15	10.75	210	10.50	125	10.67	165	10.67	140	10.75	160	11.92	665	12.67	890	11.83	640	12.00	690	10.75	325	10.91	370	11.25	465
16	10.83	220	10.50	125	10.83	165	10.58	135	11.00	170	12.00	690	12.75	915	12.00	690	11.92	665	10.83	350	10.91	370	11.16	440
17	10.83	220	10.67	120	10.75	165	10.58	145	11.00	210	11.58	565	13.00	990	12.08	715	12.00	690	10.83	350	11.00	395	11.16	440
18	10.67	210	10.50	115	10.83	165	10.83	150	11.17	250	11.58	565	12.67	890	11.92	665	12.00	690	10.58	280	11.00	395	11.25	465
19	10.67	180	10.58	110	10.75	160	10.75	160	11.00	260	11.67	590	12.00	690	12.17	740	11.92	665	10.75	325	10.91	370	11.33	490
20	10.75	180	10.58	110	10.67	155	10.67	150	11.08	270	11.42	520	11.08	420	12.17	740	11.83	640	10.75	325	11.08	420	11.25	465
21	10.75	190	10.58	100	10.58	135	10.67	145	10.75	280	11.67	590	11.58	565	12.00	690	11.67	590	10.67	305	11.00	395	11.25	465
22	10.75	190	10.67	90	10.58	125	10.58	140	11.00	300	11.50	540	11.83	640	11.67	590	11.58	565	10.66	300	10.83	350	11.33	490
23	10.67	180	10.58	90	10.50	120	10.67	140	10.83	390	11.42	520	11.33	490	11.67	590	11.75	615	10.75	325	10.75	325	11.33	490
24	10.67	180	10.42	85	10.50	130	10.58	140	11.00	395	11.92	665	11.42	520	11.50	540	11.92	665	10.75	325	11.00	395	11.25	465
25	10.67	180	10.58	80	10.58	140	10.67	135	11.00	395	12.00	690	11.50	540	11.33	490	11.92	665	10.83	350	10.91	370	11.25	465
26	10.75	175	10.58	85	10.42	120	10.58	135	11.00	395	13.42	1115	11.33	490	11.50	540	11.83	640	10.83	350	11.25	465	11.33	490
27	10.67	170	10.50	90	10.42	120	10.67	140	11.00	395	13.50	1140	12.00	690	11.33	490	11.67	590	10.75	325	11.25	465	11.25	465
28	10.67	165	10.58	105	10.50	120	10.67	140	11.00	395	13.33	1090	11.75	615	11.50	540	11.75	615	10.75	325	11.16	440	11.33	490
29	10.58	160	10.17	125	10.42	120	.....	.....	11.00	395	13.42	1115	11.67	590	11.50	540	11.53	565	10.83	350	11.00	395	11.25	465
30	10.67	150	10.83	145	10.50	120	.....	.....	11.00	395	14.00	1290	11.50	540	11.33	490	11.67	590	11.00	395	11.08	420	11.16	440
31	.....	.....	10.42	130	10.50	120	.....	.....	11.00	395	.....	.....	11.42	520	.....	.....	11.75	615	11.00	395	.....	.....	11.16	440

NOTE.—Relation of gauge height to discharge affected by ice from Nov. 3rd, 1914, to March 22nd, 1915; discharge for the period estimated from observer's notes, discharge measurements and climatologic records.

Monthly Discharge of Blanche River near Englehart for 1914-5

Drainage Area, 430 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November.(1914)	325	150	214	.76	.35	.50	.56
December "	250	80	134	.58	.19	.31	.36
January .. (1915)	210	120	143	.49	.28	.33	.38
February	165	120	138	.38	.28	.32	.33
March.....	395	140	258	.92	.33	.60	.69
April	1,290	375	657	3.00	.87	1.53	1.71
May.....	1,590	420	975	3.70	.98	2.27	2.62
June.....	740	350	545	1.72	.81	1.27	1.42
July.....	840	520	662	1.95	1.21	1.54	1.78
August	540	280	343	1.26	.65	.80	.92
September	465	325	379	1.08	.76	.88	.98
October	540	280	434	1.26	.65	1.01	1.16
The year	1,590	80	409	3.70	.19	.95	12.91

Frederickhouse River at Frederickhouse

Location—On the T.C. Ry. bridge at the Frederickhouse station, Township of Clute, Sudbury District, 6 miles west of the Town of Cochrane.

Records Available—Monthly discharge measurements from July to October, 1915. Daily gauge readings from July 7 to October 31, 1915.

Drainage Area—1,260 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, and fastened to downstream side of right abutment. Zero of gauge (elev. 9.00 feet) is referred to a bench mark (elev. 10.00 feet) on top of base of same abutment, to which gauge is connected.

Channel and Control—The channel is straight and consists of a number of rapids for about 1 mile above and below the station. The banks are high and wooded, and not liable to overflow. The bed of the stream is composed of clay and boulders, and is shifting. The velocity is high.

Discharge Measurements—Made from bridge with a Price current meter.

Regulation—Temporary dams on river above used for log driving cause fluctuations at gauge.

Observer—Gaudias LaRochelle, Frederickhouse.

Discharge Measurements of Frederickhouse River at Frederickhouse in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 10....	Murray, W. S..	55	244	2.21	.....	539(a)	.....
July 7....	" ..	191	630	4.28	11.79	2,703	.....
Aug. 6....	" ..	190	293	2.56	10.00	751	.....
Sept. 22....	" ..	190	275	2.15	9.90	591	.....

(a) Ice measurement half mile above regular section ; one foot of slush and water on ice.

Daily Gauge Height and Discharge of Frederickhouse River at Frederickhouse for 1914-5

Drainage Area 1,260 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.17	920	9.75	530	11.08	1910
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.10	850	9.75	530	11.16	2000
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.00	750	9.75	530	11.25	2095
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.00	750	9.75	530	11.41	2270
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.00	750	9.77	540	11.50	2370
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.00	750	9.79	555	11.58	2460
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.77	2665	10.09	840	9.75	530	11.66	2545
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.69	2580	10.00	750	9.75	530	11.79	2690
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.58	2460	10.00	750	9.75	530	11.83	2735
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.50	2370	10.00	750	9.70	500	11.91	2820
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.46	2325	10.00	750	9.66	480	12.00	2920
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.35	2205	10.00	750	9.62	460	12.08	3010
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.22	2060	10.00	750	9.62	460	12.00	2920
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.15	1985	9.96	710	9.66	480	12.08	3010
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.10	1930	9.92	670	9.75	530	12.12	3050
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	1820	9.87	625	9.75	530	12.16	3095
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.94	1755	9.83	590	9.75	530	12.16	3095
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.90	1710	9.79	555	9.83	585	12.16	3095
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.75	1545	9.79	555	9.83	585	12.16	3095
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.69	1480	9.79	555	9.87	625	12.08	3010
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.65	1435	9.79	555	9.89	640	12.08	3010
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.56	1335	9.83	585	9.87	625	12.00	2920
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.52	1290	9.75	530	9.87	625	12.00	2920
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.54	1310	9.75	530	9.83	585	11.91	2820
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.50	1270	9.75	530	9.93	680	11.83	2735
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.46	1225	9.75	530	11.20	2040	11.75	2645
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.40	1160	9.75	530	11.08	1910	11.71	2600
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.33	1085	9.75	530	11.00	1820	11.66	2545
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.31	1060	9.75	530	11.00	1820	11.66	2545
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.25	1000	9.75	530	11.08	1910	11.62	2500
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	10.21	960	9.75	530	.....	.....	11.50	2435

Monthly Discharge of Frederickhouse River at Frederickhouse for 1914-5

Drainage Area, 1,260 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November. (1914)	.....	.....	.....	.....	.....	.....	.....
December " .	.....	.....	.....	.....	.....	.....	.....
January .. (1915)	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June.....	.....	.....	.....	.....	.....	.....	.....
July 7-31.....	2,665	960	1,681	2.12	.76	1.33	1.40
August	920	530	654	.73	.42	.52	.60
September	2,040	460	775	1.62	.37	.62	.69
October.....	3,095	1,910	2,606	2.46	1.52	2.07	2.39
The period.....	3,095	460	1,422	2.46	.37	1.13	4.78

Kabuskong River at Bonfield

Location—About 350 feet below the dam on Lake Nasbonsing, and about ¼ mile northwest of Bonfield station on C.P. Ry., lot 10, concession 8, Township of Bonfield, Nipissing District.

Records Available—Monthly discharge measurements from June to October, 1915. Daily gauge heights from July 11 to Oct. 31, 1915.

Drainage Area—67 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, and fastened to a crib which acts as one of the supports for the log chute 100 feet upstream from gauging station. Zero of gauge (elev. 77.00 feet) is referred to bench mark (elev. 82.48 feet) painted on a rock on left shore 50 feet below gauge.

Channel and Control—Straight for about 50 feet above and 30 feet below the gauging station to the rapid. Banks are fairly high, rocky, wooded, and will not overflow. The bed of the stream is composed of clay and loose rock, slightly shifting.

Discharge Measurements—Made by wading with a small Price current meter.

Regulation—The flow is controlled by the dam above, the records only showing leakage through the dam. During the log driving period the water is diverted through the log chute, and measurements will be made here to determine the flow.

Observer—J. C. Lamothe, Bonfield.

Discharge Measurements of Kabuskong River at Bonfield in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
June 4....	Murray, W.S....	17	18	1.32	78.26	24	.....
July 10....	" ..	19	19	1.72	78.26	31	.....
Sept. 22....	" ..	19	21	1.55	78.25	32	.....

Daily Gauge Height and Discharge of Kabuskong River at Bonfield for 1914-5

Drainage Area, 67 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.37	35	78.37	35	78.37	35
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.41	36	78.37	35	78.37	35
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.41	36	78.37	35	78.37	35
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.41	36	78.37	35	78.37	35
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.48	38	78.37	35	78.37	35
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.37	35	78.36	35	78.35	35
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.37	35	78.36	35	78.35	35
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.30	33	78.33	34	78.33	34
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.34	34	78.33	34	78.33	34
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.37	35	78.35	35	78.33	34
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.25	31	78.37	35	78.35	35	78.33	34
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.25	31	78.37	35	78.37	35	78.27	32
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.27	32	78.37	35	78.33	35	78.29	33
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.33	34	78.37	35	78.33	34	78.29	33
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.33	34	78.37	35	78.25	31	78.29	33
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.33	34	78.37	35	78.25	31	78.29	33
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.33	34	78.37	35	78.29	33	78.29	33
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.34	34	78.37	35	78.27	32	78.29	33
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.35	35	78.37	35	78.33	34	78.33	34
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.35	35	78.37	35	78.33	34	78.33	34
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.35	35	78.37	35	78.33	34	78.33	34
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.35	35	78.37	35	78.33	34	78.33	34
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.37	35	78.37	35	78.33	34	78.33	34
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.37	35	78.37	35	78.33	34	78.33	34
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.37	35	78.37	35	78.33	34	78.33	34
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.38	35	78.37	35	78.33	34	78.33	34
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.38	35	78.37	35	78.37	35	78.33	34
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.42	37	78.37	35	78.37	35	78.33	34
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.42	37	78.37	35	78.37	35	78.33	34
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.42	37	78.37	35	78.37	35	78.33	34
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	78.42	37	78.37	35	.....	.....	78.33	34

Monthly Discharge of Kabuskong River at Bonfield for 1914-5

Drainage Area, 67 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in inches on Drainage Area
November (1914).	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....
January ..(1915).	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July 11–31.....	37	31	35	.55	.46	.52	.41
August	38	33	35	.57	.49	.52	.60
September.....	35	31	34	.52	.46	.51	.57
October	35	32	34	.52	.48	.51	.59
The period.....	38	31	35	.57	.46	.52	2.17

Kagawong River at Kagawong

Location—150 feet below Kagawong Falls in the Village of Kagawong, Township of Billings, Manitoulin Island.

Records Available—Monthly discharge measurements from July to October, 1915. Daily gauge heights from July 11 to October 31, 1915.

Drainage Area—94 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, connected to a 2 x 4 scantling and attached to a large rock in stream 20 feet below the gauging station. Zero of the gauge (elev. 10.00 feet) is referred to a bench mark (elev. 15.86 feet) painted on a rock on right bank at the gauging station. The initial point for soundings is located on an iron post on the left bank opposite the bench mark.

Channel—Straight for about 100 feet above and below the gauging station. Both banks are high and wooded, and are not liable to overflow. The bed of the stream is composed of rock and clay, slightly shifting, one channel existing at all stages.

Discharge Measurements—Made by wading with a small Price current meter.

Regulation—The flow is controlled by the dam 200 feet above the falls.

Observer—Stuart Hunt, Kagawong.

Discharge Measurements of Kagawong River at Kagawong in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
July 13....	Murray, W. S..	19	11	3.15	11.00	36	.....
Aug. 19....	" ..	19	19	2.64	11.23	51	.....
Sept. 28....	" ..	18	12	2.15	10.81	25	.....
" 28....	" ..	18	12	1.90	10.81	22	.....
" 28....	" ..	19	19	3.23	11.16	60	.....
" 28....	" ..	24	38	4.17	11.59	159	.....

Daily Gauge Height and Discharge of Kagawong River at Kagawong for 1914-5

Drainage Area, 94 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.00	41	11.00	41
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.00	41	11.00	41
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.00	41	11.00	41
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	10.95	36	10.87	29
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.25	75	10.95	36	11.20	67
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.25	75	10.95	36	10.87	29
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.25	75	10.96	37	10.87	29
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.02	43	10.96	37	10.87	29
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.25	75	10.96	37	10.87	29
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	10.96	37	10.87	29
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.00	41	10.89	30	10.85	27
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.02	43	10.89	30	10.83	25
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.04	46	10.89	30	11.20	67
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.00	41	10.89	30	11.21	68
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.00	41	10.89	30	10.87	29
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.25	75	10.89	30	10.87	29
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.00	41	10.89	30	10.83	25
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.00	41	10.89	30	11.04	46
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.25	75	10.89	30	10.87	29
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.25	75	11.12	55	11.21	68
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.25	75	10.87	29	11.21	68
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.00	41	10.87	29	10.83	25
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.25	75	10.89	30	10.79	22
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.13	57	10.89	30	10.77	20
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.25	75	10.89	30	10.75	19
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.25	75	10.89	30	10.75	19
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.25	75	10.87	29	11.15	59
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.25	75	11.00	41	11.16	60
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.00	41	10.81	24	10.96	37
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.00	41	11.00	41	11.16	60
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.00	41	11.00	41	.....	.....	10.80	23

Monthly Discharge of Kagawong River at Kagawong for 1914-5

Drainage Area, 94 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	.....	.....	.....	.....	.....	.....	.....
December "	.....	.....	.....	.....	.....	.....	.....
January .. (1915)	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July 11–31	41	41	41	.44	.44	.44	.34
August	75	41	56	.80	.44	.60	.69
September	65	24	34	.59	.26	.36	.40
October	68	19	38	.72	.20	.40	.46
The period	75	19	43	.80	.20	.46	1.89

Maganetawan River (North Branch) near Burk's Falls

Location—One mile north of Burk's Falls station, 200 feet upstream from the Grand Trunk Railway bridge, on lot 7, concession 10, Township of Armour, District of Parry Sound.

Records Available—Monthly discharge measurements from June to October, 1915. Daily gauge readings from August 1 to October 31, 1915.

Drainage Area—107 square miles.

Gauge—Vertical steel staff with enamelled face fastened to a 2 x 4 scantling and connected to a wooden platform on the right shore 20 feet above gauging station. Zero of the gauge (elev. 27.09 feet) is referred to a bench mark (elev. 35.00 feet) painted on top of 5-ft. iron pipe 20 feet above gauging station.

Channel and Control—Straight for about 200 feet above and 100 feet below the gauging station to the falls. The banks are high and wooded, and are not liable to overflow. The bed of the stream is composed of clay and a few rocks, practically permanent. The velocity is moderate.

Discharge Measurements—Made by wading with a small Price current meter.

Accuracy—The rating curve is fairly well defined between limits, for which gauge height records are available.

Observer—Henry Stroud, Burk's Falls.

Discharge Measurements of Maganetawan River (North Branch) near Burk's Falls in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
April 9....	Murray, W. S. ..	84	583	0.49	.....	284	1.72 (a)
June 12....	"	84	820	0.67	.....	551	3.34 (a)
July 23....	"	30	45	1.76	29.21	79	..... (b)
" 25....	"	32	56	1.45	29.17	82	..... (b)
Aug. 25....	"	43	92	1.14	29.59	105	.....
Sept. 13....	"	40	74	0.53	29.09	40	.....
" 14....	"	40	73	0.51	29.04	37	.....
" 14....	"	40	77	0.55	29.16	43	.....
Oct. 14....	"	48	106	1.30	29.88	138	.....

(a) Measurements made at Katrine Bridge.
(b) Measurement made 22 feet below gauge.

Daily Gauge Height and Discharge of Maganetawan River (North Branch) near Burk's Falls for 1914-5

Drainage Area, 107 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.00	30	29.30	63	29.50	89
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.00	30	29.25	57	29.59	101
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.03	33	29.17	48	29.67	112
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.09	39	29.13	43	29.67	112
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.09	39	29.29	62	29.75	123
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.15	45	29.29	62	29.75	123
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.13	43	29.17	48	29.75	123
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.23	55	29.13	43	29.84	137
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.44	81	29.13	43	29.92	149
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.42	79	29.09	39	29.75	123
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.42	79	29.09	39	29.50	89
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.44	81	29.09	39	29.51	90
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.76	125	29.09	39	29.50	89
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30.26	200	29.09	39	30.34	212
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.63	106	29.04	34	30.25	198
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.59	101	29.04	34	30.17	186
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.67	112	29.00	30	30.67	261
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.80	131	29.01	31	30.75	273
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.76	125	28.75	15	30.75	273
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.76	125	28.75	15	30.42	224
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.76	125	28.75	15	30.34	212
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.67	112	28.67	12	30.34	212
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.59	101	28.59	10	30.34	212
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.59	101	28.50	8	30.25	198
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.50	89	28.67	12	30.17	186
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.59	89	28.67	12	30.09	174
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.38	73	28.67	12	30.09	174
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.38	73	28.67	12	29.67	112
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.38	73	28.75	15	29.67	112
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.38	73	28.92	24	29.75	123
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.34	68	.....	.....	29.84	140

Monthly Discharge of Maganetawan River (North Branch) near Burk's Falls for 1914-5

Drainage Area, 107 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914).							
December							
January ..(1915).							
February							
March							
April							
May							
June							
July							
August	200	30	85	1.87	.28	.79	.91
September	63	8	32	.59	.07	.30	.33
October	273	89	159	2.55	.83	1.49	1.72
The period	273	8	93	2.55	.07	.87	2.96

Maganetawan River (South Branch) near Burk's Falls

Location—One-half mile south of Burk's Falls station, and 200 feet east of G.T. Ry. tracks on lot 8, concession 8, Township of Armour, Parry Sound District.

Records Available—Monthly discharge measurements from June to October, 1915. Daily gauge heights from August 1 to October 31, 1915.

Drainage Area—257 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, fastened to 2 x 8 scantling wedged between two hardwood trees on the left shore 20 feet above gauging station. Zero of the gauge (elev. 22.00 feet) is referred to a bench mark (elev. 35.00 feet) painted on top of a 5-ft. iron pipe located near the gauge on the north branch of the river.

Channel and Control—Straight for about 250 feet above and 500 feet below the rapids. The banks are high and wooded, and are not liable to overflow. The current is moderate.

Discharge Measurements—Made by wading with a small Price current meter.

Regulation—Temporary dams above, which are used during log driving season, cause fluctuations at the gauge.

Accuracy—Rating curve fairly well defined between gauge heights 23.50 and 24.00 feet. There are not sufficient data available to define a good curve above and below these limits.

Observer—Henry Stroud, Burk's Falls.

Discharge Measurements of Maganetawan River (South Branch) near Burk's Falls in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Feb. 10....	Murray, W.S ...	42	72	8.47	.....	610	89 (a)
Apr. 26.....	"	57	206	7.26	.....	1,496	219 (a)
July 23....	"	63	120	2.03	23.51	243	(b)
" 24....	"	61	90	2.06	23.50	187	(b)
Aug. 25....	"	65	112	2.20	23.83	258	.....
Sept. 14....	"	62	85	2.06	23.42	176	.....
" 14....	"	62	86	2.05	23.42	176	.....
Oct. 15....	"	65	122	2.28	23.97	278	.....

(a) Measurements at Knœffler's Falls, about 35 miles below the confluence of the North and South Branches of the Maganetawan River.
(b) Measurement made 18 feet below gauge.

Daily Gauge Height and Discharge of Maganetawan River (South Branch) near Burk's Falls for 1914-5

Drainage Area 257 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1																			23.41	177	23.62	210	23.45	183
2																			23.25	159	23.58	203	23.50	190
3																			23.27	161	23.54	196	23.50	190
4																			23.25	159	23.50	190	23.54	196
5																			23.27	161	23.50	190	23.58	203
6																			23.27	161	23.50	190	23.66	217
7																			23.27	161	23.54	196	23.66	217
8																			23.27	161	23.54	196	23.75	233
9																			23.29	163	23.50	190	23.75	233
10																			23.27	161	23.45	183	23.75	233
11																			23.27	161	23.42	179	23.83	251
12																			23.29	163	23.41	177	23.83	251
13																			23.58	203	23.42	179	23.83	251
14																			23.58	203	23.41	177	23.91	267
15																			23.64	213	23.39	175	23.92	269
16																			23.62	210	23.39	175	24.08	301
17																			23.68	220	23.37	172	24.08	301
18																			23.79	241	23.37	172	24.50	385
19																			23.83	251	23.37	172	24.66	417
20																			23.83	251	23.37	172	24.91	467
21																			23.83	251	23.41	177	25.16	497
22																			23.83	251	23.41	177	25.00	485
23																			23.79	241	23.41	177	25.00	485
24																			23.83	251	23.41	177	24.75	435
25																			23.83	251	23.41	177	24.58	401
26																			23.83	251	23.58	203	24.58	401
27																			23.77	237	23.54	196	24.58	401
28																			23.75	233	23.50	190	24.33	351
29																			23.75	233	23.40	176	24.25	335
30																			23.75	233	23.41	177	24.16	317
31																			23.66	217	.....	.....	24.16	317

Monthly Discharge of Maganetawan River (South Branch) near Burk's Falls for 1914-5

Drainage Area, 257 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914).	.....	.....	.....	.....	.....	.....	.....
December.	.....	.....	.....	.....	.....	.....	.....
January ..(1915).	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March.....	.....	.....	.....	.....	.....	.....	.....
April.....	.....	.....	.....	.....	.....	.....	.....
May.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July.....	.....	.....	.....	.....	.....	.....	.....
August	251	159	206	.98	.62	.80	.92
September.....	210	172	184	.82	.67	.72	.80
October.....	497	183	312	1.93	.71	1.21	1.39
The period.....	497	159	234	1.93	.62	.91	3.11

Mississagi River at Mississagi

Location—At the C. P. Ry. bridge, near Mississagi Flag Station, Mississagi Indian Reserve, four miles west of the Town of Blind River, Township of Cobden, Algoma District.

Records Available -Monthly discharge measurements, July, 1913, to March, 1915.

Drainage Area—3,650 square miles.

Gauge The elevation of the surface of the water is ascertained by means of a level from a bench mark (elev. 20.00) established on a rock on the left bank of the river 600 feet above the bridge and 100 feet above the rapids.

Channel—Straight for about 400 feet above and 2,000 feet below the station. Both banks are high, rocky, wooded, and will not overflow. The bed of the stream is composed of rock and is permanent. The current is swift, flowing through one channel at low stages and two channels during high water periods.

Discharge Measurements—Made from the railway bridge with a Price current meter.

Remarks This station has been discontinued on account of back water from Georgian Bay. New section established at Iron Bridge, about 15 miles upstream.

Discharge Measurements of Mississagi River at Mississagi in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 13....	Murray, W. S..	170	1,619	0.83	12.47	1,350(a)	.37
Feb. 18....	" ..	165	1,175	1.04	12.17	1,223(a)	.34
Mar. 17....	" ..	163	1,126	1.05	11.87	1,187(a)	.33
Sept. 30....	" ..	185	3,650	2.53	38.94	9,258(b)	.....

(a) Ice measurement at boat section.
(b) Measurement made at Iron Bridge.

Montreal River at Latchford

Location—At the Temiskaming and Northern Ontario Railway Bridge, 300 feet below the Government dam, in the Town of Latchford, Township of Coleman, Temiskaming District.

Records Available—Monthly discharge measurements, August, 1914, to March, 1915. Daily gauge heights, April 1, 1914, to July 31, 1915.

Drainage Area—2,450 square miles.

Gauge—Vertical steel staff, located on the left downstream side of the Government dam. This is a Dominion Government gauge graduated to feet and hundredths. The zero on the gauge (elev. 892.43) is referred to a bench mark (elev. 912.42) which is painted with red paint near the centre of the dam.

Channel—Straight for about 300 feet above and 200 feet below the station. The banks are high, rocky, and will not overflow. The bed is composed of sand and rock, slightly shifting. The river is fast and flows through two channels at low stages and three channels during high water periods.

Discharge Measurements—Made from the downstream side of the bridge with a Price current meter.

Regulation—The operation of the Government dam above causes fluctuations at the section and interferes with the natural flow of the river.

Winter Flow—The river is open at the station during the winter months, but frozen above the dam and below the section.

Accuracy—Conditions are unfavorable for making accurate discharge measurements. The station rating curve is poor, and therefore no attempt has been made to compute the daily discharge.

Co-operation—Records will be obtained from the Department of Public Works, Ottawa, who operate the dam above.

Remarks—This station has been discontinued.

Observer—Geo. Schneider, Latchford.

Discharge Measurements of Montreal River at Latchford in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 8....	Murray, W. S...	209	259	5.32	.....	1,381	.56
Feb. 13....	" ...	228	423	3.22	.....	1,380	.56
Mar. 13....	" ...	223	243	5.11	.....	1,242	.51

Muskoka River (North Branch) near Port Sydney

Location—At the highway bridge near the Village of Port Sydney and ¼ mile below Mary Lake, on lot 25, concession 5, Township of Stephenson, Muskoka District.

Records Available—Monthly discharge measurements from April to October, 1915. Daily gauge heights from April 16 to Oct. 31, 1915.

Drainage Area—560 square miles.

Gauge—Vertical steel staff with enamelled face graduated in feet and inches and fastened to abutment on left upstream side of bridge. Zero of gauge (elev. 7.00 feet) is referred to a bench mark (elev. 24.78 feet) painted on top of right abutment, downstream side.

Channel—Straight for about 1,500 feet above and 500 feet below gauging station. Both banks are high, wooded, and not liable to overflow. The bed of the channel is composed of clay and gravel.

Discharge Measurements—Made from highway bridge with a small Price current meter.

Regulation—The operation of dam at Mary Lake during certain periods of the year will cause fluctuation in stage at the gauge.

Accuracy—The rating curve is fairly well defined, and estimates of discharge are fair.

Observer—H. McInnes, Port Sydney.

Discharge Measurements of Muskoka River (North Branch) near Port Sydney in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Apr. 13....	Murray, W. S...	58	484	6.28	11.75	3,040	.....
May 18....	"	54	327	2.23	9.00	728	.....
June 16....	"	57	379	3.73	9.88	1,415	.....
July 27....	"	46	260	0.46	7.83	120	.....
Aug. 27....	"	45	288	1.78	8.48	513	.....
Sept. 10....	"	47	266	0.62	7.95	168	.....
Oct. 14....	"	55	360	3.93	9.60	1,417	

Daily Gauge Height and Discharge of Muskoka River (North Branch) near Port Sydney for 1914-5

Drainage Area, 560 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.83	721	7.83	130	8.00	205	9.16	952
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.83	721	7.83	130	8.25	350	9.16	952
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.62	578	7.83	130	8.00	205	9.16	952
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.25	350	7.83	130	8.00	205	9.16	952
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9.00	840	7.83	130	8.00	205	9.16	952
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9.17	959	8.12	272	8.00	205	9.00	840
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.71	637	8.42	452	8.00	205	9.00	840
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.33	398	8.42	452	8.12	272	9.00	840
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.42	452	8.42	452	8.29	374	9.00	840
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.42	452	8.42	452	7.95	178	9.58	1260
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.42	452	8.16	296	7.83	130	9.58	1260
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.33	398	7.92	161	7.83	130	8.50	500
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.33	398	8.42	452	7.91	155	9.49	1192
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.50	500	8.41	446	7.91	155	9.49	1192
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.50	500	8.41	446	7.91	155	9.00	840
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9.83	1447	8.50	500	8.41	446	7.91	155	9.00	840
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9.38	1110	8.17	302	8.07	243	7.91	155	9.04	868
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9.08	896	8.17	302	7.87	141	8.16	296	9.66	1320
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9.21	987	8.17	302	7.83	130	7.91	155	9.66	1320
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9.83	1447	8.04	227	7.83	130	9.91	155	9.00	840
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9.83	1447	7.92	161	7.83	130	7.91	155	9.00	840
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9.50	1200	7.92	161	7.83	130	7.91	155	8.83	721
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9.54	1230	7.92	161	8.16	296	7.91	155	8.83	721
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.42	452	7.83	130	8.16	296	7.91	155	8.83	721
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.46	476	7.83	130	8.16	296	7.91	155	8.83	721
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.83	721	7.83	130	8.83	721	7.91	155	8.83	721
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.83	721	7.83	130	8.16	296	7.91	155	8.16	296
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.83	721	7.83	130	8.16	296	8.41	446	8.16	296
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.83	721	7.83	130	8.25	350	9.16	952	8.16	296
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8.83	721	7.83	130	8.25	350	9.16	952	8.16	296
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7.83	130	8.12	272	.....	.....	8.16	296

Monthly Discharge of Muskoka River (North Branch) near Port Sydney for 1914-5

Drainage Area 560 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile.			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area.
November (1914)							
December. "							
January .. (1915)							
February							
March							
April							
May							
June 16–31	1,447	452	953	2.85	.81	1.70	.95
July	959	130	371	1.71	.23	.66	.76
August	721	130	292	1.29	.23	.52	.60
September	952	130	249	1.70	.23	.45	.50
October	1,320	296	821	2.36	.53	1.47	1.69
The period	1,447	130	491	2.85	.23	.88	4.50

Muskoka River (South Branch) at Tretheway's Falls

Location—At small steel highway bridge known as Tretheway's Falls Bridge, about 1 mile south of the Muskoka Falls Post Office and about 7 miles south of the Town of Bracebridge, Township of Draper, Muskoka District.

Records Available—Monthly discharge measurements, August, 1912, to October, 1915. Daily gauge heights, June 4, 1914, to October 31, 1915.

Drainage Area—668 square miles.

Gauge As there is no available place for establishing a permanent staff gauge, a bench mark (elevation 25.00), painted on a stringer, on the up-stream side of the bridge, is used in ascertaining the water elevation, by measuring down to the surface of the stream with a graduated staff. It is referred to a bench mark (elevation 33.08) painted on a large rock on the right bank, 90 feet to the right of the downstream side of the bridge.

Channel and Control—Straight for about 300 feet above and 300 feet below the station. The banks are fairly high, rocky and wooded and will not overflow. The current is very swift and the bed of stream is rough and rocky, with a heavy slope about 250 feet below the section.

Discharge Measurements—Made from the upstream side of the bridge with a Price current meter and a stay line.

Winter Flow The gauge is located where the current is swift and ice seldom forms across the river for the entire width. The relation of gauge height to discharge is not affected by ice.

Accuracy—Measurements made at Black's Bridge 1 mile above, were used in conjunction with those made at Tretheway's Falls, and a fairly well-defined rating curve has been established. Open water curve used throughout the year.

Observer—Wesley Morrow, Muskoka Falls.

Discharge Measurements of Muskoka River (South Branch) at Tretheway's Falls in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
April 12....	Murray, W. S...	53	312	6.29	16.80	1,959	.....
" 23....	"	50	330	6.25	16.85	2,067	.....
" 24....	"	89	1,622	1.30	16.85	2,113(a)	.....
May 19....	"	50	231	3.42	14.92	790	.....
" 19....	"	89	1,411	0.63	14.92	902(a)	.....
" 20....	"	50	242	4.14	15.00	1,002	.....
June 15....	"	50	300	6.36	16.20	1,910	.....
" 15....	"	89	1,566	1.08	16.20	1,686(a)	.....
July 28....	"	49	178	3.38	14.05	603	.....
" 28....	"	89	1,364	0.43	14.05	592(a)	.....
Aug. 27....	"	47	172	3.17	13.92	546	.....
Sept. 11....	"	49	170	2.57	13.84	437	.....
Oct. 13....	"	48	182	3.04	14.17	554	.....

(a) Measurement made at Black's Bridge, 1 mile above.

Daily Gauge Height and Discharge of Muskoka River (South Branch) at Tretheway's Falls for 1914-5

Drainage Area, 668 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	12.92	350	13.75	650	14.25	665	14.17	640	14.17	640	14.42	730	16.42	1820	15.00	995	14.42	730	14.00	580	13.84	525	13.92	550
2	12.83	325	14.00	750	14.25	665	14.33	695	14.08	610	14.42	730	16.42	1820	15.50	1265	14.33	695	14.00	580	13.75	500	13.84	525
3	12.83	325	14.25	870	14.25	665	14.58	790	14.00	580	14.50	760	16.42	1820	16.00	1560	14.33	695	14.00	580	13.75	500	13.92	550
4	12.75	300	14.00	750	14.25	665	14.83	905	14.00	580	14.50	760	16.33	1765	15.50	1265	14.33	695	14.00	580	13.75	500	14.00	580
5	12.67	280	13.75	650	14.33	695	14.58	790	14.00	580	14.50	760	16.50	1875	15.33	1170	14.50	760	14.09	615	13.75	500	14.09	615
6	12.67	280	13.67	610	14.50	760	14.17	640	14.08	610	14.58	790	16.50	1875	15.42	1220	14.50	760	14.09	615	13.75	500	14.17	640
7	12.75	300	13.67	610	14.50	760	14.00	580	14.00	580	15.50	1265	16.42	1820	15.50	1265	14.33	695	14.09	615	13.75	500	14.25	665
8	12.67	280	13.58	580	14.50	760	14.00	580	14.00	580	15.50	1265	16.25	1710	16.50	1875	14.33	695	14.08	610	13.84	525	14.25	665
9	12.67	280	13.50	550	14.42	730	14.17	640	13.92	550	15.67	1360	16.17	1660	16.50	1875	14.33	695	14.00	580	13.84	525	14.34	700
10	12.75	300	13.42	510	14.42	730	14.17	640	13.92	550	16.17	1660	15.67	1360	16.25	1710	14.33	695	14.08	610	13.75	500	14.25	665
11	12.83	325	13.42	510	14.42	730	14.08	610	13.92	550	16.25	1710	15.25	1125	16.00	1560	14.33	695	14.08	610	13.84	525	14.25	665
12	13.00	360	13.50	550	14.33	695	14.08	610	14.00	580	16.25	1710	15.25	1125	16.00	1560	14.33	695	14.17	640	13.75	500	14.17	640
13	13.00	360	13.50	550	14.25	665	14.00	580	13.92	550	16.75	2035	16.25	1710	16.00	1560	14.25	665	14.17	640	13.75	500	14.09	615
14	13.00	360	13.50	550	14.17	640	14.00	580	13.92	550	16.75	2035	15.50	1265	16.25	1710	14.25	665	14.08	610	13.84	525	14.17	640
15	13.17	420	13.42	510	14.17	640	14.00	580	13.83	525	18.63	3720	15.25	1125	16.25	1710	14.25	665	14.09	615	13.84	525	14.25	665
16	13.58	580	13.42	510	14.25	665	13.92	550	13.83	525	17.00	2210	15.00	995	16.17	1660	14.17	640	14.09	615	13.75	500	14.25	665
17	13.42	510	13.50	550	14.25	665	13.83	525	14.17	640	17.00	2210	15.50	1265	16.17	1660	14.17	640	14.17	640	13.75	500	14.25	665
18	13.33	475	13.50	550	14.33	695	13.75	500	14.17	640	17.00	2210	15.25	1125	15.83	1460	14.25	665	14.09	615	13.75	500	14.25	665
19	13.25	450	13.58	580	14.33	695	13.83	525	14.08	610	17.00	2210	15.00	995	15.00	995	14.25	665	14.00	580	13.75	500	14.25	665
20	13.25	450	13.58	580	14.25	665	13.92	550	14.08	610	16.92	2155	15.00	995	14.75	865	14.33	695	13.92	550	13.75	500	14.25	665
21	13.17	420	13.58	580	14.25	665	13.92	550	14.00	580	16.92	2155	14.75	865	14.75	865	14.33	695	13.92	550	13.84	525	14.25	665
22	13.17	420	13.67	610	14.25	665	13.92	550	14.00	580	16.92	2155	14.75	865	14.83	905	14.25	665	13.92	550	13.84	525	14.17	640
23	13.17	420	13.67	610	14.25	665	13.83	525	14.00	580	16.83	2100	14.75	865	14.67	830	14.25	665	13.92	550	13.84	525	14.08	610
24	13.33	475	13.75	650	14.25	665	14.00	580	14.08	610	16.83	2100	14.75	865	14.50	760	14.17	640	14.00	580	13.75	500	14.00	580
25	13.58	580	13.83	680	14.25	665	14.00	580	14.08	610	16.83	2100	14.83	905	14.50	760	14.17	640	14.00	580	13.75	500	14.00	580
26	13.58	580	13.83	680	14.25	665	14.00	580	14.00	580	16.75	2035	14.83	905	14.50	760	14.17	640	14.09	615	13.92	550	14.00	580
27	13.67	610	13.67	610	14.17	640	14.08	610	14.00	580	16.75	2035	14.83	905	14.50	760	14.08	610	14.00	580	13.92	550	14.00	580
28	13.83	680	13.75	650	14.17	640	14.08	610	14.08	610	16.67	1985	14.83	905	14.50	760	14.08	610	13.92	550	13.84	525	14.00	580
29	14.00	750	13.83	680	14.17	640	.....	.....	14.17	640	16.58	1920	14.83	905	14.50	760	14.08	610	13.92	550	13.84	525	14.00	580
30	13.83	680	14.00	750	14.17	640	.....	.....	14.33	695	16.50	1875	14.82	900	14.50	760	14.17	640	13.84	525	13.84	525	14.00	580
31	.....	.....	14.00	750	14.17	640	.....	.....	14.33	695	.....	.....	15.00	995	.....	.....	14.00	580	13.84	525	.....	.....	14.00	580

Monthly Discharge of Muskoka River at Tretheway's Falls for 1914-5

Drainage Area, 668 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914).	750	280	431	1.12	.42	.65	.73
December	870	510	620	1.30	.76	.93	1.07
January (1915).	760	640	679	1.14	.96	1.02	1.18
February	905	500	611	1.35	.75	.91	.96
March	695	525	594	1.04	.79	.89	1.03
April	3,720	730	1,758	5.57	1.09	2.63	2.93
May	1,875	865	1,262	2.81	1.29	1.89	2.18
June	1,875	760	1,227	2.81	1.14	1.84	2.05
July	760	580	671	1.14	.87	1.00	1.15
August	640	525	588	.96	.79	.88	1.01
September	550	500	513	.82	.75	.77	.86
October	700	525	621	1.05	.79	.93	1.07
The year	3,720	280	798	5.57	.42	1.19	16.22

Seguin River near Parry Sound

Location—700 feet below Mountain Dam, two miles above the highway bridge, and about 7 miles above the Town of Parry Sound, Township of McDougal, Parry Sound District.

Records Available—Monthly discharge measurements from June, 1912, to October, 1915. Daily gauge heights from August 1 to October 31, 1915.

Drainage Area—380 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, firmly wedged in rock on left shore 200 feet below dam. Zero of gauge (elev. 8.00 feet) is referred to a bench mark (elev. 15.00 feet) painted on a large rock directly across stream from gauge.

Channel—Both banks are high, wooded and not liable to overflow. The bed of the stream is composed of rocks and boulders, slightly shifting. The current is swift, and flows through one channel at all stages.

Discharge Measurements—Made by wading with a Price current meter. During high water, measurements are made at the highway bridge at the head of Mill Lake, 2 miles below wading section.

Regulation—The dam 700 feet above gauging station causes fluctuation of river at gauge.

Winter Flow—Ice forms along the banks of river at the station during the winter months. The river is entirely covered with ice for a considerable distance above and below station.

Accuracy—Discharges for gauge heights below 10.6 feet are considered fair. Rating curve above this point not very well defined.

Observer—Francis Haywood, Parry Sound.

Discharge Measurements of Seguin River near Parry Sound in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 14....	Murray, W. S....	105	142	2.08	10.80	296 (a)	.....
Feb. 19....	"	63	510	0.71	10.90	362 (b)	.....
April 15....	"	63	605	5.02	.....	3033 (b)	.....
May 17....	"	77	93	2.24	10.73	209	.....
June 17....	"	96	158	2.22	11.15	350	.....
July 26....	"	78	82	2.10	10.43	173	.....
Aug. 26....	"	95	110	1.62	10.55	178	.....
Sept. 9....	"	79	70	1.95	10.33	137	.....

(a) Ice on both banks at section; river covered with ice 200 feet below.
(b) Measurement made at highway bridge at head of Mill Lake, 2 miles below wading section.

Daily Gauge Height and Discharge of Seguin River near Parry Sound for 1914-5

Drainage Area, 380 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1																								
2																			10.41	152	10.33	139	11.25	380
3																			10.41	152	10.33	139	11.58	489
4																			10.37	145	10.33	139	11.68	522
5																			10.37	145	10.32	138	11.79	557
6																			10.37	145	10.31	136	11.65	516
7																			10.39	148	10.29	134	11.56	483
8																			10.36	144	10.26	131	11.50	463
9																			10.33	139	10.27	132	11.43	440
10																			10.32	138	10.31	136	11.33	407
11																			10.31	136	10.32	138	11.25	380
12																			10.30	135	10.35	142	11.19	361
13																			10.29	134	10.30	135	11.14	344
14																			10.33	139	10.26	131	11.00	298
15																			10.37	145	10.19	125	10.97	289
16																			10.48	164	10.18	124	10.89	259
17																			10.46	160	10.21	127	10.80	235
18																			10.40	150	10.25	130	10.89	259
19																			10 89	259	10.27	130	11.02	305
20																			11.39	427	10.29	134	10.51	169
21																			11.37	420	10.29	134	11.11	334
22																			11.36	417	10.35	142	11.18	357
23																			11.27	387	10.51	169	11.25	380
24																			11.25	380	10.83	243	11.32	404
25																			11.08	324	11.04	311	11.37	420
26																			10.75	222	11.37	420	11.45	440
27																			10.53	173	11.20	364	11.60	496
28																			10.43	155	11.00	298	11.74	542
29																			10.44	157	10.91	271	11.97	618
30																			10.48	164	10.84	246	11.99	625
31																			10.40	150	11.00	298	11.79	557
																			10.33	139	.....	.....	11.79	557

Monthly Discharge of Seguin River near Parry Sound for 1914-5

Drainage Area, 380 Square Miles

Month.	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	.....	.....	.....	.....	.....	.....	.....
December "	.....	.....	.....	.....	.....	.....	.....
January (1915)	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July.....	.....	.....	.....	.....	.....	.....	.....
August.....	427	134	201	1.12	.35	.53	.61
September.....	420	124	181	1.11	.33	.48	.54
October	618	169	415	1.63	.45	1.09	1.26
The period.....	618	124	267	1.63	.33	.70	2.41

South River near Powassan

Location—At highway bridge known as Healey's Bridge, about 2½ miles north-west of the Town of Powassan, on lot 21, conces-ion 13, Township of Himsworth, District of Parry Sound.

Records Available—Monthly discharge measurements from March, 1912, to October, 1915. Daily gauge heights from March 11, 1914, to October 31, 1915.

Drainage Area—305 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, which was removed from old bridge and located on the north-west corner of the left abutment of the new Gough's highway bridge, about one mile below gauging station. Zero of gauge (elev. 23.00) is referred to bench mark (elev. 56.15) painted on a rock in the top corner of barn foundation known as Gough's barn, about 350 feet from gauge.

Channel—Straight for about 200 feet above and 1,500 feet below the gauging station. Both banks are high and not liable to overflow. The bed of the stream consists of clay and boulders, slightly shifting. The current is moderate.

Discharge Measurements—Made from Healey's highway bridge during high water, and, during low water periods, by wading 100 feet above bridge.

Control—About 5 miles below gauging station there is a dam used by the Nipissing Power Company which may cause back water at the gauge.

Winter Flow—During the winter months measurements are made through ice to determine the winter flow. The relation of gauge height to discharge is seriously affected by ice.

Accuracy—The rating curve is fairly well defined. Discharges for open water period are considered good.

Observer—Owen Gough, Powassan.

Remarks—The old Gough's Bridge was replaced in April, 1915, by a new bridge 150 feet upstream.

Discharge Measurements of South River near Powassan in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Feb. 12....	Murray, W. S....	50	96	1.26	24.16	122(a)	.....
Mar. 12....	"	58	110	1.38	24.20	152(a)	.....
April 22....	"	72	692	1.28	27.83	883(b)	.....
May 15....	"	112	397	0.94	25.58	375	.....
June 24....	"	110	353	0.72	25.12	257	.....
July 21....	"	49	76	1.33	24.02	101(c)	.....
Aug. 23....	"	73	143	1.64	24.87	235(c)	.....
Sept. 15....	"	56	74	0.80	23.54	59(c)	.....
" 15....	"	56	74	0.84	23.54	62(c)	.....
" 15....	"	56	74	0.80	23.54	59(c)	.....
" 15....	"	56	74	0.80	23.54	59(c)	.....
Oct. 21....	"	111	431	0.91	25.83	396	.....

(a) Measurement made on ice at wading section.
(b) Measurement made on downstream side of Gough's Bridge.
(c) Wading section.

Daily Gauge Height and Discharge of South River near Powassan for 1914-5

Drainage Area, 305 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	24.25	149	25.67	389	24.25	111	24.25	117	24.42	159	24.42	173	26.67	612	24.66	210	24.50	185	23.75	87	24.81	234	24.66	210
2	24.29	155	26.71	399	24.17	101	24.25	117	24.42	159	24.42	173	26.00	457	24.67	211	24.54	191	23.67	77	24.74	222	24.55	192
3	24.29	155	26.88	432	24.17	101	24.25	117	24.42	159	24.42	173	26.00	457	24.63	205	24.63	205	23.67	77	24.49	183	24.29	155
4	24.37	166	26.58	371	24.25	111	24.25	123	24.33	147	24.58	197	25.96	449	24.63	205	24.75	224	23.91	106	24.24	148	24.33	160
5	24.88	245	26.17	293	24.17	101	24.33	127	24.42	159	24.67	211	25.92	440	24.50	185	24.92	251	25.04	271	24.12	133	24.79	230
6	25.00	264	25.67	389	24.08	109	24.42	146	24.25	136	25.00	264	25.83	421	24.42	173	25.08	278	25.12	284	24.00	117	25.41	337
7	24.88	245	25.50	355	24.25	130	24.33	134	24.33	147	25.54	363	25.88	432	24.33	160	25.50	355	25.33	322	23.96	112	25.29	314
8	24.79	230	25.25	307	24.42	152	24.33	134	24.25	136	26.63	381	26.25	513	24.62	203	25.33	322	25.42	339	23.83	97	25.16	291
9	24.58	197	25.04	271	24.33	140	24.25	123	24.25	136	28.25	1063	26.54	582	25.33	322	25.42	339	25.62	379	23.75	87	25.54	363
10	24.42	173	25.00	264	24.33	140	24.25	123	24.25	136	29.25	1475	26.38	543	25.21	300	25.25	307	26.08	475	23.79	92	26.08	475
11	24.38	167	24.83	237	24.25	130	24.17	113	24.25	136	31.42	2510	26.08	475	25.17	293	24.63	205	25.79	413	23.91	106	26.00	457
12	24.71	218	24.79	183	24.25	130	24.25	123	24.25	149	30.80	2480	26.00	457	25.17	293	24.38	167	25.45	345	23.79	92	25.87	430
13	24.79	230	24.75	178	24.42	152	24.25	123	24.25	149	29.87	1822	25.88	432	25.17	293	24.21	144	25.67	389	23.62	71	25.95	446
14	24.90	248	24.67	166	24.50	163	24.25	123	24.42	173	30.05	1930	25.88	432	25.08	278	24.17	139	26.04	466	23.50	58	25.87	430
15	24.75	224	24.54	148	24.50	163	24.54	162	24.46	179	30.04	1924	25.58	371	25.25	307	24.17	139	25.66	387	23.50	58	26.04	466
16	26.83	653	24.50	143	24.50	163	24.67	175	24.42	173	29.63	1681	25.46	347	25.67	389	24.08	127	25.33	322	23.50	58	26.00	457
17	26.54	582	24.50	143	24.42	152	24.58	167	24.58	197	29.00	1350	25.50	355	25.67	389	24.08	127	25.20	298	23.62	71	25.87	430
18	26.00	457	24.46	138	24.42	152	24.42	146	24.42	173	28.59	1186	25.50	355	25.58	371	24.04	122	25.50	355	23.95	111	25.79	413
19	25.75	405	24.42	138	24.42	139	24.42	146	24.25	149	28.42	1122	25.63	381	25.42	339	24.00	117	25.46	347	24.04	122	25.66	387
20	25.42	339	24.42	138	24.42	139	24.33	134	24.25	149	28.33	1090	25.46	347	25.42	339	24.00	117	25.33	322	24.00	117	25.70	395
21	25.25	307	24.42	138	24.25	117	24.33	134	24.17	139	28.00	982	25.41	337	25.42	339	24.00	117	25.12	284	24.12	133	25.83	421
22	25.00	264	24.42	138	24.33	127	24.50	156	24.16	138	27.84	932	25.37	329	25.29	314	24.00	117	25.04	271	24.25	149	25.66	387
23	25.00	264	24.42	138	24.33	127	24.33	134	24.50	185	27.62	866	25.37	329	25.21	300	23.96	112	24.95	256	24.20	143	25.66	387
24	24.92	251	24.42	138	24.33	127	24.33	134	24.75	224	27.75	905	25.37	329	25.12	284	23.92	107	24.75	224	24.25	149	25.58	371
25	24.92	251	24.33	121	24.33	127	25.08	245	24.92	251	28.25	1063	25.37	329	25.08	278	23.92	107	24.29	155	24.20	143	25.33	322
26	25.08	277	24.33	121	24.33	127	24.83	205	24.96	254	28.08	1008	25.21	300	25.00	264	23.92	107	24.41	172	24.54	191	25.25	307
27	25.25	307	24.33	121	24.33	137	24.67	181	24.75	224	27.67	884	25.08	278	24.96	258	23.92	107	23.75	87	26.16	492	25.16	291
28	25.25	307	24.33	121	24.25	117	24.58	167	24.50	185	27.58	854	25.04	271	24.84	238	24.00	117	23.75	87	25.99	455	25.08	278
29	25.00	264	24.33	121	24.25	117	.....	.....	24.50	185	27.50	831	24.96	258	24.67	211	23.92	107	23.66	76	25.49	353	25.00	264
30	25.00	264	24.33	121	24.25	117	.....	.....	24.50	185	27.33	784	24.83	237	24.62	203	22.92	107	23.87	101	25.16	291	25.00	264
31	.....	.....	24.33	121	24.25	117	.....	.....	24.50	185	.....	.....	24.66	210	.....	.....	23.83	97	24.25	149	.....	.....	25.00	264

NOTE.—Relation of gauge height to discharge affected by ice from Dec. 11th, 1914, to March 11th, 1915; discharges computed from discharge measurements, observer's notes and climatologic records.

Monthly Discharge of South River near Powassan for 1914-5

Drainage Area, 305 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November .(1914)	653	149	275	2.14	.49	.90	1.00
December "	432	121	209	1.42	.40	.68	.78
January ..(1915)	163	101	130	.53	.33	.43	.50
February.....	245	113	144	.80	.37	.47	.49
March.....	254	136	170	.83	.45	.56	.65
April.....	2,510	173	1,022	8.23	.57	3.35	3.74
May.....	612	210	389	2.01	.69	1.28	1.48
June.....	389	160	272	1.28	.52	.89	.99
July.....	355	97	170	1.16	.32	.56	.65
August.....	479	77	256	1.57	.25	.84	.97
September.....	492	58	160	1.61	.19	.52	.58
October.....	475	155	342	1.56	.51	1.12	1.29
The year.....	2,510	58	295	8.23	.19	.97	13.12

Spanish River at Espanola

Location—At highway bridge, about 200 yards below Espanola Falls and about the same distance below the Spanish River Pulp and Paper Mills, in the Town of Espanola, Township of Merritt, Sudbury District.

Records Available Monthly discharge measurements from March, 1914, to October, 1915. Daily gauge heights from May 6 to October 31, 1915.

Drainage Area—4,490 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, fastened to pile near left abutment on upstream side of bridge. Zero of gauge (elev. 19.00 feet) is referred to bench mark (elev. 25.38 feet) located on top of nose of left abutment.

Channel—Above the station the water from the Falls and Power House flows into a pool about 700 feet wide and then narrows down to 225 feet at the bridge, thence flowing straight for about 1,000 feet. Both banks are high, rocky, wooded, and will not overflow. The bed of the stream is composed of clay and boulders, practically permanent. The current is fast, one channel existing at low stages. At high stages the stream flows through two channels, separated by the centre pier of the bridge.

Discharge Measurements—Made from highway bridge with a Price current meter.

Regulation—The paper plant uses all the water coming down the river at low stages during the summer, discharging through the tail race and past the section. The river is used throughout the spring and summer for log driving.

Winter Flow—Ice forms about one mile below the station, but remains open at the gauging section during the entire year.

Accuracy—Conditions at station are not very favorable for making accurate discharge measurements. The discharge relation is affected by logs during the log driving period. As there are not sufficient records available to compute discharges for that period, the open water rating curve was assumed applicable.

Observer—Matthew Doyle, Espanola.

Discharge Measurements of Spanish River at Espanola in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 13....	Murray, W. S..	216	2,487	0.95	21.67	2,382 (a)	.....
Feb. 18....	" ..	203	2,482	1.02	21.68	2,535 (a)	.....
Mar. 17....	" ..	215	2,557	1.09	22.08	2,783 (b)	.....
June 8....	" ..	220	2,731	1.54	22.88	4,230 (b)	.....
July 12....	" ..	219	2,713	1.66	22.80	4,526 (b)	.....
Aug. 16....	" ..	211	2,427	0.46	20.50	1,125 (c)	.....
Sept. 27....	" ..	218	2,917	1.42	22.79	4,155	.....
" 29....	" ..	222	3,215	2.06	24.11	6,624	.....
Oct. 1....	" ..	233	3,429	1.68	23.91	5,791 (d)	.....

(a) Ice on river half mile below section.
(b) Logs on control.
(c) Dam above closed.
(d) Measurement taken at Webbwood, 8 miles below.

Daily Gauge Height and Discharge of Spanish River at Espanola for 1914-5

Drainage Area 4,490 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec ft.	Feet	Sec-ft.	Feet	Sec-ft.
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.58	6770	23.40	5000	19.84	745	21.37	2045	23.91	5765
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.00	5900	23.36	4940	20.33	1000	21.41	2090	23.68	5420
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23.92	5780	23.29	4835	20.54	1165	21.25	1905	24.10	6050
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23.35	4925	22.91	4265	21.17	1815	21.00	1630	23.70	5450
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.92	7280	22.83	4145	23.34	4910	21.85	2690	19.83	740	24.29	6335
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.83	7145	22.79	4080	23.18	4670	21.87	2720	19.50	650	24.48	6620
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.67	6900	23.00	4400	22.91	4265	21.47	2170	21.12	1760	24.46	6590
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.83	7145	23.04	4460	22.94	4310	22.62	3830	21.20	1850	24.62	6830
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.67	6900	23.04	4460	22.93	4290	22.29	3335	21.37	2040	24.75	7025
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.83	7145	22.96	4340	22.91	4260	21.79	2605	21.37	2040	25.04	7460
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.75	7025	23.25	4775	22.15	3120	21.56	2290	20.93	1550	25.25	7775
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.67	6900	23.25	4775	22.83	4145	21.56	2290	20.00	810	25.25	7775
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.67	6900	23.84	5660	22.73	3995	22.34	3410	21.24	1890	25.23	7745
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.75	7025	25.25	7770	22.65	3875	21.33	1995	21.47	2170	25.33	7895
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.67	6900	25.29	7835	22.37	3455	21.33	1995	21.54	2260	25.35	7925
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.75	7025	25.21	7715	22.06	2990	21.49	2195	21.27	1925	25.35	7925
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.08	7520	25.21	7715	21.52	2235	21.38	2055	21.31	1970	24.74	7010
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.08	7520	25.20	7700	21.34	2010	21.54	2260	21.25	1905	25.37	7955
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.67	6900	25.21	7715	22.21	3210	21.48	2180	20.12	870	25.37	7955
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.58	6770	25.94	8810	22.06	2990	21.51	2220	21.37	2040	25.35	7925
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.58	6770	26.08	9020	21.71	2490	21.25	1905	22.23	3245	25.29	7835
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.75	7025	25.90	8750	21.56	2290	20.37	1030	22.12	3080	25.37	7955
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.92	7280	25.51	8165	21.56	2290	21.70	2480	22.06	2990	25.20	7700
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.75	7025	24.89	7235	21.60	2340	21.50	2210	21.81	2630	24.12	6080
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.67	6900	24.69	6935	20.87	1490	21.70	2480	21.48	2180	24.41	6515
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.50	6650	24.32	6380	20.96	1585	21.35	2020	22.24	3260	23.78	5570
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.83	7145	23.93	5795	20.71	1330	21.83	2660	22.81	4115	23.54	5210
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.75	7025	24.50	6350	20.79	1410	21.25	1905	23.52	5180	22.62	3830
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.75	7025	24.15	6125	20.86	1480	20.20	920	24.08	6020	22.56	3740
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.50	6650	23.79	5585	20.88	1480	21.18	1830	24.08	6020	23.33	4895
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.71	6965	.....	.....	20.94	1565	21.60	2340	.....	.....	22.37	3455

Monthly Discharge of Spanish River at Espanola for 1914-5

Drainage Area 4,490 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)							
December "							
January...(1915)							
February							
March							
April							
May 5-31	7,520	6,650	7,017	1.67	1.48	1.56	1.57
June	9,020	4,080	6,332	2.01	.91	1.41	1.57
July	5,000	1,330	3,146	1.11	.30	.70	.81
August	3,830	745	2,153	.85	.17	.48	.55
September	6,020	650	2,429	1.34	.14	.54	.60
October	7,955	3,455	6,588	1.79	.77	1.47	1.69
The period	9,020	650	4,560	2.01	.14	1.02	6.79

Sturgeon River at Smoky Falls

Location—At the highway bridge at Smoky Falls Post Office, and 2 miles above the Smoky Falls, Township of Springer, Nipissing District.

Records Available——Monthly discharge measurements, August, 1912, to October, 1915. Daily gauge heights, January 12 to 31, 1914, and March 15, 1914, to October 31, 1915.

Drainage Area—2,250 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, and attached to a wooden pile on the right, upstream side of the bridge. The zero on the gauge (elevation 32.00) is referred to a bench mark (elevation 53.47) painted on a rock on the right bank of the river, about 175 feet above the bridge.

Channel—Straight for about 700 feet above and about 1 mile below the station. The banks are fairly high, clean, sandy and not liable to overflow. The bed of the stream is composed of clay and sand, slightly shifting. The current is fast and smooth, flowing through six channels, formed by bridge piers and abutments.

Discharge Measurements—Made from highway bridge with a Price current meter.

Regulation—Dams above are used for power and log driving purposes.

Winter Flow—During the winter months the river is covered with ice, and measurements are made through the ice to determine the winter discharge. The relation of gauge height to discharge is seriously affected by ice.

Accuracy—The open water rating curve is fairly well defined. The relation of gauge height to discharge is affected during the log-driving season, the discharges as shown in the table for that period being somewhat in excess of the true value.

Observer—A. Pineault, Smoky Falls.

Discharge Measurements of Sturgeon River at Smoky Falls in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Feb. 16....	Murray, W. S ..	162	1,343	0.48	33.50	648(a)	.....
Mar. 16....	" ..	177	1,395	0.38	33.08	536(a)	.....
April 28....	" ..	210	2,329	1.06	36.00	3,777(b)	.....
June 28....	" ..	210	1,883	1.16	34.42	2,175(b)	.....
July 20....	" ..	210	1,980	0.94	34.14	1,868	.....
Aug. 30....	" ..	210	1,875	0.75	33.68	1,410(b)	.....
Sept. 17....	" ..	210	1,939	1.01	33.91	1,592	.....
" 18....	" ..	210	1,939	0.97	33.90	1,881	.....
" 18....	" ..	210	1,939	1.01	33.90	1,958	.....
Oct. 8....	" ..	210	2,149	1.43	34.90	3,081	.....

(a) Ice on control
(b) Logs on control

Daily Gauge Height and Discharge of Sturgeon River at Smoky Falls for 1914-5

Drainage Area 2,250 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*sec-ft.*	*Feet*	*sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft*	*Feet*	*Sec-ft.*
1	34.00	2380	34.00	2380	33.67	670	33.42	600	33.25	640	32.92	695	36.42	5764	35.75	4650	34.38	2572	34.04	2138	33.78	1848	35.29	3914
2	34.00	2380	34.33	2810	33.67	675	33.33	610	33.25	640	32.83	680	36.42	5764	35.62	4442	34.54	2796	34.16	2282	33.91	1991	35.20	3770
3	34.17	2600	34.58	3140	33.67	680	33.17	620	33.25	640	32.83	665	36.17	5339	35.25	3850	34.54	2796	33.91	1991	33.91	1991	35.04	3530
4	34.33	2810	34.58	3140	33.67	680	33.33	640	33.17	640	33.83	680	36.00	5050	35.67	4522	34.37	2558	33.67	1730	33.87	1947	34.91	3335
5	34.50	3025	34.45	2970	33.67	690	33.33	650	33.25	630	33.08	740	35.92	4922	35.67	4522	34.37	2558	33.67	1730	33.75	1815	34 91	3335
6	34.67	3250	34.33	2810	33.67	710	33.33	670	33.25	630	33.25	945	36.00	5050	35.42	4122	34.42	2628	33.75	1815	33.62	1680	34.91	3335
7	34.75	3350	34.25	2710	33.75	740	33.42	680	33.25	630	33.25	1350	36.00	5050	35.12	3656	34.50	2740	34.33	2502	33.58	1640	34.91	3335
8	34.83	3460	34.17	2600	33.83	780	33.33	690	33.17	620	33.92	2002	36.67	6189	35.08	3590	34.71	3035	34.29	2447	33.24	1342	34.87	3275
9	34.83	3460	34.08	2500	33.83	820	33.33	690	33.17	620	34.58	2852	36.67	6189	35.04	3530	34.33	2502	34.37	2558	33.03	1174	34.67	2978
10	34.75	3350	34.00	2380	33.83	820	33.33	690	33.17	610	34.92	3350	36.67	6189	34.96	3410	34.33	2502	34.20	2330	32.87	1062	34.62	2908
11	34.67	3250	33.92	2270	33.83	820	33.33	680	33.17	600	35.00	3470	36.83	6464	34.92	3350	34.45	2670	33.95	2035	32.83	1038	34.58	2852
12	34.67	3250	33.83	2180	33.83	820	33.42	680	33.17	580	35.42	4122	36.75	6325	35.04	3530	34.29	2447	33.75	1815	32.83	1038	34.50	2740
13	34.58	3140	33.83	2000	33.75	810	33.42	680	33.17	570	35.50	4250	36.58	6036	34.96	3410	34.21	2343	34.04	2138	32.87	1062	34.62	2908
14	34.33	2810	33.75	1800	33.75	800	33.33	670	33.17	550	35.25	3850	36.58	6036	35.04	3530	34.29	2447	33.83	1903	33.03	1174	34.83	3215
15	34.42	2925	33.75	1640	33.75	800	33.42	630	33.17	550	35.08	3590	36.17	5339	35.21	3786	34.25	2395	33.75	1815	33.03	1174	34.83	3215
16	34.83	3460	33.67	1420	33.75	780	33.42	630	33.08	540	35.00	3470	35.83	4778	35.42	4122	34.13	2246	33.71	1771	35.83	1903	34.70	3020
17	34.67	3250	33.58	1240	33.75	760	33.42	640	33.08	540	35.08	3590	35.50	4250	35.29	3914	34.21	2343	33.79	1859	33.87	1947	34.62	2908
18	34.00	2380	33.50	1100	33.75	740	33.33	640	33.08	540	34.92	3350	35.33	3978	35.33	3978	34.25	2395	33.91	1991	33.91	1991	34.62	2908
19	34.00	2380	33.42	960	33.75	710	33.33	640	33.00	550	35.00	3470	35.17	3725	35.38	4058	34.12	2234	33.67	1730	33.49	1551	34.58	2852
20	34.00	2380	34.00	860	33.75	680	33.33	640	33.00	560	35.17	3725	35.25	3850	35.50	4250	34.17	2294	33.62	1680	33.29	1382	34.50	2740
21	34.00	2380	34.00	780	33.75	670	33.33	640	32.92	580	35.58	4378	35.17	3725	35.42	4122	33.91	1991	33.62	1680	34.08	2186	34.50	2740
22	34.88	3530	34.00	740	33.67	630	33.33	640	32.92	600	35.92	4922	35.83	4778	35.21	3786	33.75	1815	33.54	1600	34.45	2670	34.45	2670
23	34.00	2380	33.92	700	33.67	610	33.33	640	33.08	620	33.92	4922	36.17	5339	35.21	3786	33.79	1859	33.25	1350	34.50	2740	34.37	2558
24	34.00	2380	33.83	680	33.67	600	33.33	640	33.17	650	35.83	4778	36.17	5339	35.29	3914	33.83	1903	33.29	1382	34.50	2740	34.29	2447
25	33.92	2270	33.75	650	33.58	590	33.33	640	33.25	695	35.50	3250	35.92	4922	35.12	3650	33.83	1903	33.50	1560	34.45	2670	34.20	2330
26	33.92	2270	33.67	640	33.58	590	33.33	640	33.25	725	35.58	4378	36.17	5339	34.96	3410	33.87	1947	33.12	1246	34.91	3335	34.16	2282
27	34.00	2380	33.75	650	33.58	590	33.33	640	33.25	725	36.17	5339	36.08	5186	34.74	3080	33.74	1804	33.12	1246	35.54	4314	34.12	2234
28	33.92	2270	33.67	650	33.58	590	33.25	640	33.17	710	35.92	4922	35.75	4650	34.58	2852	33.83	1903	32.91	1087	35.66	4506	34.08	2186
29	33.92	2270	33.75	650	33.50	590	.....	.....	33.08	680	36.33	5611	36.00	5050	34.46	2684	34.04	2138	32.95	1115	35.54	4314	34.00	2090
30	33.83	2180	33.75	650	33.50	590	.....	.....	33.00	665	36.33	5611	35.25	3850	34.50	2740	34.17	2294	33.62	1680	35.45	4170	34.04	2138
31	.....	.....	33.67	650	33.42	600	.....	.....	33.00	690	.....	....	35.38	4058	.....	.....	34.17	2294	33.83	1903	.....	.....	34.00	2090

NOTE.—Relation of gauge heights to discharge affected by ice from Dec. 12th, 1914, to April 6th, 1915; discharge for the period estimated from discharge measurements, observer's notes and climatologic records.

Monthly Discharge of Sturgeon River at Smoky Falls for 1914-5

Drainage Area 2,250 Square Miles

Month	Discharge in Second-feet.			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area.
November (1914)	3,530	2,180	2,787	1.57	.97	1.24	1.38
December "	3,140	650	1,624	1.40	.29	.72	.83
January .. (1915)	820	590	698	.36	.26	.31	.36
February	690	600	650	.31	.27	.29	.30
March.....	725	540	620	.32	.24	.28	.32
April.....	5,611	665	3,332	2.49	.30	1.48	1.65
May.....	6,464	3,725	5,114	2.87	1.66	2.27	2.62
June	4,650	2,684	3,742	2.07	1.19	1.66	1.85
July.....	2,796	1,804	2,334	1.24	.80	1.04	1.20
August	2,558	1,087	1,810	1.14	.48	.80	.92
September.....	4,506	1,038	2,146	2.00	.46	.95	1.06
October.....	3,914	2,090	2,866	1.74	.93	1.23	1.42
The year	6,464	540	2,316	2.87	.24	1.05	13.90

Vermilion River near White Fish

Location—At the old highway bridge 50 feet above the rapids, 300 feet north of C.P.R. bridge, and two miles east of the Town of White Fish, Township of Graham, Sudbury District.

Records Available—Monthly discharge measurements from August, 1913, to October, 1915. Daily gauge heights from June 11 to October 31, 1915.

Drainage Area—1,580 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, attached to crib on right shore 50 feet below gauging station. Zero of gauge (elev. 25.58 feet) is referred to bench mark (elev. 38.39 feet) painted on rock on right bank 15 feet above gauging station.

Channel and Control—Straight for about 300 feet above and 700 feet below the station. Both banks are high, rocky and wooded, and not liable to overflow. Bed of stream is rocky and permanent, current is swift, two channels existing at all stages on account of the centre pier of the bridge. Log jams sometimes occur on the rapids during low flows, causing back water at the station.

Discharge Measurements—Made from old highway bridge with a Price current meter.

Winter Flow—On account of the fast current the channel at gauging station remains open during the winter months, ice forming at banks.

Accuracy—Rating curve fairly well defined between gauge heights 27.00 feet and 29.00 feet. As there are not sufficient data available for computing the discharge during the log driving period the open water curve was assumed applicable.

Observer—A. Boucher, White Fish.

Discharge Measurements of Vermilion River near White Fish in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
May 12....	Murray, W. S..	187	1,020	2.29	29.30	2,343(a)	.....
June 11....	" ..	200	1,005	2.24	29.05	2,249(a)	.....
Aug. 31....	" ..	165	698	1.03	27.34	721	.....
Oct. 2....	" ..	191	916	2.22	28.70	2,034	.....

(a) Logs on control.

Daily Gauge Height and Discharge of Vermilion River near Whitefish for 1914-5

Drainage Area 1,580 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec ft.	Feet	Sec-ft.	Feet	Sec-ft.
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28.88	2250	26.96	440	27.33	690	28.91	2280
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28.97	2350	26.97	445	27.24	630	28.75	2090
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.05	2460	26.88	400	27.24	630	28.83	2185
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28.97	2350	26.88	400	27.24	630	28.83	2185
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28.97	2350	26.88	400	27.24	630	29.24	2725
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.05	2460	26.88	400	27.16	570	29.25	2740
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.05	2460	26.80	360	27.16	570	29.33	2850
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.05	2460	26.80	360	27.16	570	29.58	3200
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.05	2460	26.80	360	27.08	520	29.49	3075
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.05	2460	26.88	400	27.08	520	29.33	2850
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.05	2460	28.80	2150	26.88	400	27.08	520	29.33	2850
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.13	2570	28.80	2150	26.88	400	27.08	520	28.91	2280
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.05	2460	28.80	2150	26.88	400	27.08	520	28.83	2185
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.05	2460	28.30	1570	26.88	400	27.08	520	28.66	1980
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.30	2810	28.05	1310	26.88	400	27.08	520	28.66	1980
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.30	2810	28.13	1390	26.80	360	27.08	520	28.58	1885
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.30	2810	28.05	1310	26.71	315	27.08	520	28.66	1980
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.38	2920	27.88	1150	26.71	315	27.08	520	28.66	1980
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.30	2810	27.80	1080	26.71	315	27.16	570	28.74	2080
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.30	2810	27.55	850	26.88	400	27.24	630	28.74	2080
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.38	2920	27.55	850	26.88	400	27.33	690	28.74	2080
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.38	2920	27.47	790	26.71	315	27.33	690	28.74	2080
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.22	2700	27.38	710	26.63	275	27.33	690	28.74	2080
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.13	2570	27.38	710	26.63	275	27.41	750	28.74	2080
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.47	3050	27.30	670	26.55	240	27.41	750	28.66	1980
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29.47	3050	27.22	610	26.30	180	27.83	1110	28.58	1885
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28.97	2350	27.22	610	26.05	130	27.91	1180	28.58	1885
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28.88	2250	27.13	550	25.96	110	28.49	1780	28.33	1605
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28.88	2250	27.13	550	25.88	95	28.74	2080	28.24	1500
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	28.72	2050	27.05	490	25.90	100	28.91	2280	28.25	1510
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27.05	490	27.30	670	.....	.....	28.16	1420

Monthly Discharge of Vermilion River near Whitefish for 1914-5

Drainage Area, 1,580 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum.	Mean.	Depth in Inches on Drainage Area
November (1914)	.....	.....	.....	.....	.....	.....	.....
December "	.....	.....	.....	.....	.....	.....	.....
January (1915)	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June 11–30	3,050	2.050	2,651	1.93	1.30	1.68	1.25
July	2,460	490	1,490	1.56	.31	.94	1.08
August	445	95	337	.28	.06	.21	.24
September	2,280	520	777	1.44	.33	.49	.55
October	3,200	1,420	2,179	2.03	.90	1.38	1.59
The period	3,200	95	1,403	2.03	.06	.89	4.71

Wanapitei River near Wanapitei

Location—100 feet above the falls known as Timmins Chute, six miles above the Village of Wanapitei, Township of Dryden, Sudbury District.

Records Available—Monthly discharge measurements from August, 1912, to October, 1915. Daily gauge heights from August 15 to October 31, 1915.

Drainage Area—940 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, and fastened on 2 x 8 scantling to a large elm tree on left bank 150 feet above falls. Zero of gauge (elev. 24.00 feet) is referred to bench mark (elev. 30.00 feet) painted on top of prominent rock at brink of falls on right shore.

Channel—Straight for about 500 feet above and 100 feet below gauging station. Banks are high, rocky and wooded, and do not overflow. The bed of the stream is composed of clay and gravel, slightly shifting. The current is moderate.

Discharge Measurements—Made by boat with Price current meter.

Winter Flow—River is covered with ice during the winter months, and measurements are made through ice to determine the winter discharge.

Observer—Wilfred Rioux, Wanapitei.

Discharge Measurements of Wanapitei River near Wanapitei in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 12....	Murray, W. S..	65	344	1.38	24.95	474(a)	.....
Feb. 17....	" ..	70	190	2.54	24.85	484(a)	.....
June 30....	" ..	137	874	1.96	27.83	1,712(b)	.....
July 19....	" ..	136	840	1.65	27.58	1,389	.....
Aug. 17....	" ..	104	595	.82	25.33	490	.....
Sept. 2....	" ..	105	616	.94	25.58	583	.....
Oct. 7....	" ..	112	621	1.04	25.66	647	.....

(a) Ice on control
(b) Logs on control

Daily Gauge Height and Discharge of Wanapitei River at Wanapitei for 1914-5

Drainage Area, 940 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.75	715	25.58	640	25.54	620
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.66	675	25.58	640	25.83	755
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.66	675	25.54	620	25.83	755
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.66	675	26.41	1005	25.92	795
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.66	675	26.16	900	26.04	850
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.66	675	26.08	865	25.75	715
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.83	755	26.12	880	25.66	675
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.75	715	25.83	755	25.66	675
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.75	715	25.83	755	25.70	695
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.75	715	25.83	755	25.66	675
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.50	605	25.83	755	25.70	795
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.25	490	26.00	830	25.70	695
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.25	490	25.91	785	26.75	715
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.25	490	25.91	785	25.83	755
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27.67	1580	25.25	490	26.00	830	25.79	735
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27.64	1565	25.33	530	25.91	785	25.79	735
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27.62	1555	25.33	530	25.75	715	25.79	735
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27.58	1535	25.25	490	25.58	640	25.83	755
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27.58	1535	25.25	490	25.41	565	25.91	790
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27.50	1500	25.25	490	25.33	530	25.83	755
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	27.50	1500	25.17	455	26.00	830	25.87	775
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26.83	1200	25.33	530	25.83	755	25.83	755
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26.83	1200	25.33	530	25.50	605	25.83	755
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26.83	1200	26.17	900	25.50	605	25.79	735
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26.08	865	25.75	715	25.41	565	25.75	715
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26.08	865	25.75	715	26.33	980	25.75	715
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26.08	865	25.66	675	26.33	980	25.79	735
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26.08	865	25.66	675	25.92	795	25.79	735
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26.08	865	25.66	675	25.58	640	25.79	735
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	26.08	865	25.62	660	25.58	640	25.83	755
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25.75	715	25.58	640	.....	.....	25.79	735

Monthly Discharge of Wanapitei River near Wanapitei for 1914-5

Drainage Area, 940 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1414)	.....	.....	.....	.....	.....	.....	.....
December "	.....	.....	.....	.....	.....	.....	.....
January ..(1915)	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March.....	.....	.....	.....	.....	.....	.....	.....
April.....	.....	.....	.....	.....	.....	.....	.....
May.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July 15-31.....	1,580	715	1,193	1.68	.76	1.27	.74
August	900	490	621	.96	.52	.66	.76
September.....	1,005	530	748	1.07	.56	.80	.89
October.....	850	620	733	.90	.66	.78	.90
The period.....	1,580	490	777	1.68	.52	.83	3.29

Regular Stations

NORTH-WESTERN ONTARIO DISTRICT

River	Location	Drainage Area Sq. Miles	Township	County or District
Eagle	at Eagle River	970		Kenora Dist.
English	at Caribou Falls			"
"	at Ear Falls	11,700		"
"	at Manitou Falls	14,600		"
"	near Oak Falls	15,570		"
"	at Sturgeon Falls			"
Footprint	at Rainy Lake Falls	590		Rainy River Dist.
Manitou	at Devil's Cascades	435		" "
Seine	at Skunk Rapids	2,300		" "
Turtle	at Mountain Rapids	1,760		" "
Wabigoon	near Quibell	2,400		" "
"	at Wabigoon Falls	3,120		Kenora Dist.

Eagle River at Eagle River

Location—At the highway bridge 1,000 feet south of the C.P. Ry. crossing of the river, and above the Cascades, in the Township of Aubrey, District of Kenora. This river is a branch of the Wabigoon River.

Records Available—Discharge measurements from January, 1914, to October, 1915. Daily gauge heights February 12, 1914, to October 31, 1915.

Drainage Area—970 square miles.

Gauge—Vertical staff with enamelled face screwed to a 2 x 4 inch scantling, which is nailed to the south side of the bridge crib near the south-east corner, and next to the left bank of the river. The zero on the gauge (elev. 1,172.99) is referred to a bench mark (elev. 1,176.56, C.P.R. datum) painted on a point of rock on the left bank a few feet above the cross-section.

Channel and Control—Straight for about 100 feet above the station, with the water flowing slowly. Below the section the channel is straight for about 20 feet, with the water running swiftly to the Cascades. The banks are clean, high, rocky and not liable to overflow. The bed consists of rock, and is permanent. At extreme high water the flow is cut up by the bridge piers, but under normal conditions the flow is all through one channel.

Discharge Measurements—Made from the highway bridge with a small Price current meter.

Winter Flow—Not affected by ice. The water at the section never freezes.

Accuracy—The station rating curve is well defined. Fluctuation in gauge heights is occasionally augmented by wind on Eagle Lake.

Observer—J. Nelson, Eagle River.

Discharge Measurements of Eagle River at Eagle River in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 10....	Taylor, J. R....	45	135	2.24	1,174.07	302	.....
Feb. 11....	"	40	129	2.02	1,173.87	263	.....
April 22....	Binns, P. V	40	130	2.16	1,173.99	282	.....

Daily Gauge Height and Discharge of Eagle River at Eagle River for 1914-5

Drainage Area 970 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1174.32	373	1174.26	355	1174.11	316	1173.95	275	1173.95	275	1173.84	250	1174.45	419	1174.97	620	1175.32	774	1174.95	602	1174.28	364	1174.18	335
2	1174.36	388	1174.22	345	1174.09	310	1173.95	275	1173.97	280	1173.84	250	1174.47	426	1174.97	620	1175.32	774	1174.91	593	1174.24	352	1174.18	335
3	1174.34	378	1174.22	345	1174.11	316	1173.95	275	1173.97	280	1173.82	245	1174.51	440	1174.97	620	1175.26	747	1174.82	558	1174.24	352	1174.18	335
4	1174.36	388	1174.20	340	1174.11	316	1173.95	275	1173.99	285	1173.82	245	1174.53	447	1175.01	637	1175.32	774	1174.78	542	1174.24	352	1174.16	329
5	1174.34	378	1174.20	340	1174.11	316	1173.93	270	1173.99	285	1173.84	250	1174.51	440	1175.01	637	1175.32	774	1174.76	534	1174.24	352	1174.16	329
6	1174.32	373	1174.18	335	1174.09	310	1173.93	270	1173.99	285	1173.84	250	1174.51	440	1174.99	629	1175.26	747	1174.74	526	1174.24	352	1174.18	335
7	1174.28	361	1174.18	335	1174.09	310	1173.95	275	1173.97	280	1173.87	256	1174.53	447	1174.99	629	1175.26	747	1174.70	510	1174.22	346	1174.18	335
8	1174.32	373	1174.18	335	1174.07	305	1173.95	275	1173.97	280	1173.87	256	1174.53	447	1174.99	629	1175.24	738	1174.70	510	1174.20	340	1174.14	324
9	1174.32	373	1174.16	330	1174.09	310	1173.93	270	1173.95	275	1173.87	256	1174.82	558	1175.01	637	1175.22	729	1174.70	510	1174.20	340	1174.14	324
10	1174.32	373	1174.18	335	1174.07	305	1173.93	270	1173.95	275	1173.87	256	1174.82	558	1175.01	637	1175.22	729	1174.70	510	1174.20	340	1174.09	310
11	1174.32	373	1174.18	335	1174.07	305	1173.91	266	1173.93	270	1173.87	256	1174.84	566	1175.01	637	1175.24	738	1174.68	502	1174.18	335	1174.07	305
12	1174.24	351	1174.16	330	1174.07	305	1173.89	261	1173.91	266	1173.89	261	1174.87	579	1174.99	629	1175.24	738	1174.66	495	1174.16	329	1174.05	300
13	1174.22	345	1174.16	330	1174.07	305	1173.89	261	1173.91	266	1173.89	261	1174.89	587	1175.01	637	1175.24	738	1174.66	495	1174.16	329	1174.03	295
14	1174.20	340	1174.16	330	1174.05	300	1173.89	261	1173.93	270	1173.89	261	1175.01	637	1175.03	646	1175.22	729	1174.66	495	1174.14	324	1174.03	295
15	1174.22	345	1174.16	330	1174.05	300	1173.87	256	1173.91	266	1173.89	261	1175.01	637	1175.03	646	1175.20	720	1174.61	476	1174.16	329	1174.03	295
16	1174.20	340	1174.16	330	1174.07	305	1173.93	270	1173.89	261	1173.89	261	1174.99	629	1175.05	655	1175.18	711	1174.61	476	1174.16	329	1174.01	290
17	1174.26	355	1174.16	330	1174.07	305	1173.95	275	1175.87	256	1173.91	266	1174.97	620	1175.05	655	1175.16	702	1174.61	476	1174.11	316	1174.01	290
18	1174.16	330	1174.16	330	1174.07	305	1173.97	280	1173.87	256	1173.91	266	1174.99	629	1175.05	655	1175.16	702	1174.59	468	1174.11	316	1173.99	285
19	1174.24	351	1174.16	330	1174.05	300	1173.99	285	1173.84	250	1173.93	270	1175.01	637	1175.03	646	1175.16	702	1174.59	468	1174.11	316	1173.97	280
20	1174.26	355	1174.16	330	1174.03	295	1173.99	285	1173.84	250	1173.95	275	1175.03	646	1175.07	663	1175.16	702	1174.57	461	1174.09	310	1173.95	275
21	1174.24	351	1174.16	330	1174.03	295	1173.99	285	1173.84	250	1173.95	275	1175.03	646	1175.07	663	1175.14	694	1174.57	461	1174.07	305	1173.97	280
22	1174.22	345	1174.16	330	1174.03	295	1173.99	285	1173.84	250	1173.95	275	1175.01	637	1175.05	655	1175.11	680	1174.53	447	1174.07	305	1173.97	280
23	1174.24	351	1174.16	330	1174.03	295	1173.99	285	1173.84	250	1173.97	280	1175.01	637	1175.07	663	1175.09	672	1174.49	433	1174.07	305	1173.95	275
24	1174.26	355	1174.14	326	1174.01	290	1173.97	280	1173.89	261	1173.97	280	1174.99	629	1175.09	672	1175.07	663	1174.49	433	1174.07	305	1173.93	270
25	1174.28	361	1174.14	326	1173.99	285	1173.97	280	1173.89	261	1174.14	297	1174.97	620	1175.09	672	1175.07	663	1174.45	419	1174.07	305	1173.91	265
26	1174.28	361	1174.11	318	1173.99	285	1173.97	280	1173.89	261	1174.20	340	1175.01	637	1175.14	694	1175.05	655	1174.45	419	1174.09	310	1173.91	265
27	1174.28	361	1174.14	326	1173.99	285	1173.95	275	1173.87	256	1174.32	376	1175.03	646	1175.16	702	1175.01	637	1174.45	419	1174.11	316	1173.97	280
28	1174.26	355	1174.14	326	1173.99	285	1173.95	275	1173.87	256	1174.39	399	1175.01	637	1175.18	711	1175.03	646	1174.43	412	1174.14	324	1173.99	285
29	1174.28	361	1174.14	326	1173.97	280	.....	....	1173.84	250	1174.43	412	1174.99	629	1175.20	720	1174.99	629	1174.39	399	1174.16	329	1173.99	285
30	1174.28	361	1174.14	326	1173.97	280	.....	....	1173.84	250	1174.43	412	1174.99	629	1175.26	747	1174.97	620	1174.37	392	1174.16	329	1173.97	280
31	.....	....	1174.11	318	1173.95	275	.....	....	.....	250	.....	....	1174.97	620	.....	....	1174.92	599	1174.34	383	.....	.....	1173.95	275

Monthly Discharge of Eagle River at Eagle River for 1914-5

Drainage Area, 970 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	388	330	360	.40	.34	.37	.41
December "	355	318	322	.37	.33	.33	.38
January .. (1915)	316	275	300	.33	.28	.31	.36
February	285	261	346	.29	.27	.36	.37
March	285	250	265	.29	.26	.27	.31
April	412	245	283	.42	.25	.29	.32
May	646	419	573	.67	.43	.59	.68
June.....	747	620	655	.77	.64	.68	.76
July	774	599	706	.80	.62	.73	.84
August	602	383	478	.62	.40	.49	.56
September	364	305	329	.38	.31	.34	.38
October.....	335	265	298	.35	.27	.31	.36
The year	774	245	410	.80	.25	.42	5.73

English River at Caribou Falls

Location—About 1,200 feet above Caribou Falls, the last falls on the river, and about five miles from the Winnipeg River, District of Kenora.

Records Available—Discharge measurements from May, 1914, to August, 1915.

Drainage Area—21,600 square miles.

Gauge—Vertical staff located on the left bank of the river 25.6 feet north of a blazed jack pine, which is used as the initial point for soundings. The zero on the gauge (elevation 100.00) is referred to a bench mark (elevation 109.45) painted on a point of rock 16 feet south of the blazed jack pine.

Channel and Control—Above the station the channel takes a 90 degree curve to the right, thence following comparatively straight to the head of the falls. Both banks are high, rocky and wooded, and not liable to overflow. The bed of the stream is rocky, with large boulders or protruding shelves of rock and practically permanent. The water at the left bank is still, backwater existing at higher stages. The natural control is wide and unobstructed.

Discharge Measurements—Made from a canoe, and occasionally through ice, with a small Price current meter.

Winter Flow—Ice conditions make little or no difference, the channel being rarely frozen over.

Accuracy—The measured discharge is probably slightly in excess of the true value.

Discharge Measurements of English River at Caribou Falls in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Mar. 5....	Binns, P.V.....	234	9,762	0.68	100.84	6,606(a)	.31
May 10....	"	236	10,044	0.96	101.83	9,619	.45
July 12....	"	240	10,262	1.28	102.67	12,900	.60
Aug. 15....	Carmichael, R.M	240	10,191	1.17	102.44	11,890	.55

(a) Boat and ice measurement. Section mostly ice covered. Ice above and below section

English River at Ear Falls

Location—At the foot of Lac Seul, about three miles below Pine Ridge Hudson's Bay Co's. Post, and about ¼ mile above upper Ear Falls, District of Kenora.

Records Available—Discharge measurements from July, 1914, to October, 1915. Bi-weekly gauge heights, February 1 to October 31, 1915.

Drainage Area—11,700 square miles.

Gauge—Vertical staff with enamelled face screwed to a 6-inch hewn spruce post which is firmly wedged in the rock of the left bank 200 feet below a 2-inch poplar, which is painted white and used as the initial point for soundings. The zero on the gauge (elev. 115.12) is referred to a bench mark (elev. 122.75) painted on a point of rock 5 feet above the gauge.

Channel and Control—Straight for about 300 feet above and below the station, then turning to the left widens out to the top of the falls. Both banks are high, rocky and wooded, and will not overflow. The bed of the stream at the section is apparently permanent; the current sluggish, and flowing through one channel at all stages. The natural control is wide, shallow and unobstructed.

Discharge Measurements—Made from a canoe with a small Price current meter.

Winter Flow—Ice conditions make little difference, the channel rarely freezing over.

Accuracy—Backwater at the left bank causes a little difficulty in making accurate discharge measurements.

Observer—Chas. McIvor, care of Hudson's Bay Co's. Lac Seul Post, Sioux Lookout P.O.

Remarks—The very steady regimen of the English River, together with the lack of gauge readers, makes it possible and necessary to apply the gauge heights at Ear Falls to gauges at Manitou and Oak Falls. Gauge readings taken on nearly the same day were used in making up curves for the three stations, and the results obtained justify the assumptions made. No allowance is made for lag. With additional data it may be possible to extend the system to points farther down the river.

Discharge Measurements of English River at Ear Falls in 1914-5

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 29....	Binns, P. V	333	8,184	0.55	118.41	4,545(a)	.....
Mar. 31....	"	332	8,146	0.52	118.01	4,211(b)	.....
June 1....	"	336	8,677	0.83	119.61	7,233	.....
" 17....	"	337	8,710	0.90	119.68	7,871	.....
July 13....	Carmichael, R.M	338	8,777	0.96	119.89	8,400	.....
Sept 5....	"	336	8,575	0.76	119.31	6,559(c)	.....
Oct. 16....	"	335	8,608	0.80	119.43	6,903	.....

(a) Ice measurement.
(b) Boat measurement; ice on Lac Seul; open water to Pine Ridge and down to falls.
(c) Water very rough; unable to hold canoe steady; strong unstream wind.

Daily Gauge Height and Discharge of English River at Ear Falls for 1914-5

Drainage Area, 11,700 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	117.95	4080	.....	.....	119.62	7600	.....	.....	.....	.....	.....	.....	119.29	6570
2	.....	.....	.....	.....	.....	.....	118.39	4600	118.24	4390	117.93	4070	118.50	4790	.....	.....	119.83	8360	119.79	8210	.....	.....	.....	.....
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	119.33	6690	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	117.91	4050	118.62	5010	119.58	7460	.....	.....	.....	.....	.....	.....	.....	.....
5	.....	.....	.....	.....	.....	.....	118.41	4640	118.12	4250	117.87	4020	118.66	5080	.....	.....	.....	.....	.....	.....	.....	.....	119.45	7050
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	117.87	4020	.....	.....	.....	.....	119.74	8030	119.70	7880	.....	.....	.....	.....
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	119.29	6570	.....	.....
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	118.79	5340	119.54	7330	.....	.....	.....	.....	.....	.....	119.29	6570
9	.....	.....	.....	.....	.....	.....	118.41	4640	118.08	4210	117.89	4030	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	117.87	4020	.....	.....	.....	.....	119.79	8210	119.70	7880	118.85	5690	.....	.....
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	117.85	4010	119.08	6010	119.62	7600	.....	.....	.....	.....	.....	.....	.....	.....
12	.....	.....	.....	.....	.....	.....	118.43	4670	118.08	4210	117.89	4030	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	119.37	6800
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	117.89	4030	.....	.....	.....	.....	.....	.....	119.62	7600	.....	.....	.....	.....
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	117.91	4050	119.29	6570	.....	.....	.....	.....	.....	.....	118.87	5520	.....	.....
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	117.91	4050	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	119.45	7040
16	.....	.....	.....	.....	.....	.....	118.41	4640	118.08	4210	117.93	4070	.....	.....	.....	.....	119.91	8670	.....	.....	.....	.....	119.43	6980
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	117.95	4080	119.33	6690	.....	.....	.....	.....	119.62	7600	119.04	5910	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	117.95	4080	.....	.....	119.70	7880	.....	.....	.....	.....	.....	.....	.....	.....
19	.....	.....	.....	.....	.....	.....	118.29	4450	.....	.....	117.95	4080	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	119.20	6320
20	.....	.....	.....	.....	.....	.....	.....	.....	118.00	4130	118.04	4170	.....	.....	.....	.....	119.87	8550	119.54	7330	.....	.....	.....	.....
21	.....	.....	.....	.....	.....	.....	.....	.....	118.02	4150	118.06	4190	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	118.08	4210	.....	.....	119.66	7740	.....	.....	.....	.....	.....	.....	119.29	6570
23	.....	.....	.....	.....	.....	.....	118.31	4490	118.02	4150	118.12	4250	.....	.....	.....	.....	119.87	8550	.....	.....	.....	.....	.....	.....
24	.....	.....	.....	.....	.....	.....	.....	.....	118.00	4130	118.16	4300	.....	.....	.....	.....	.....	.....	119.41	6920	119.20	6320	.....	.....
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	118.20	4340	.....	.....	119.70	7880	.....	.....	.....	.....	119.12	6110	.....	.....
26	.....	.....	.....	.....	.....	.....	118.20	4340	118.00	4130	118.27	4430	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	119.20	6320
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	118.33	4520	.....	.....	.....	.....	119.83	8360	119.33	6690	.....	.....	.....	.....
28	.....	.....	.....	.....	.....	.....	.....	.....	117.95	4080	118.37	4570	.....	.....	.....	.....	.....	.....	.....	.....	119.24	6430	.....	.....
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	119.79	8210	.....	.....	.....	.....	.....	.....	119.12	6110
30	.....	.....	.....	.....	.....	.....	.....	.....	117.97	4100	118.41	4640	.....	.....	.....	.....	119.83	8360	.....	.....	.....	.....	.....	.....
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	119.45	7050	.....	.....	.....	.....

Monthly Discharge of English River at Ear Falls for 1914-5

Drainage Area, 11,700 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November..(1914)	.....	.....	.....	.....	.....	.....	.....
December "	.....	.....	.....	.....	.....	.....	.....
January ...1915)	.....	.....	.....	.....	.....	.....	.....
February	4,670	4,340	4,559	.40	.37	.39	.41
March	4,390	4,080	4,178	.37	.35	.36	.42
April	4,640	4,010	4,169	.40	.34	.36	.40
May.....	6,690	4,790	5,641	.57	.41	.48	.55
June.....	8,210	7,330	7,712	.70	.63	.66	.74
July	8,670	8,030	8,386	.74	.69	.72	.83
August	8,210	6,690	7,462	.70	.57	.64	.74
September	6,690	5,520	6,155	.57	.47	.53	.59
October	7,050	6,110	6,634	.60	.52	.57	.66
The period.....	8,670	4,010	5,688	.74	.34	.49	5.34

English River at Manitou Falls

Location—About 800 feet above the first chute of the Manitou Falls, and five miles below the mouth of the Mattawa River and the old Mattawa H. B. Co's. Post. Cedar River enters the English River ½ mile below the metering section.

Records Available—Discharge measurements from July, 1914, to October, 1915. Bi-weekly gauge heights interpolated from Ear Falls rauge heights from February 1 to October 31, 1915.

Drainage Area—14,600 square miles.

Gauge—Vertical staff with enamelled face screwed to a 6-inch pine post and firmly wedged and wired to the right bank 15 feet south of a 2-inch jack pine, which is used as the initial point for soundings. The zero on the gauge (elev. 89.42) is referred to a bench mark (elev. 100.43) painted on a point of rock 2.5 feet south-east of the initial point.

Channel and Control—About 1,200 feet above the station the channel begins to narrow down and turns to the right out of the lake above. It is comparatively straight thence to the station and falls. Both banks are high, rocky and wooded, and will not overflow. The bed of the stream is rocky and permanent. The current is slow above and moderately swift at the section.

Discharge Measurements—Made from a canoe with a small Price current meter.

Remarks—The very steady regimen of the English River, together with the lack of gauge readers, makes it possible and necessary to apply the gauge heights at Ear Falls to the gauge at Manitou Falls. Gauge readings taken on nearly the same day were used in making up curves for the two stations, and the results obtained justify the assumptions made. No allowance is made for "lag."

Discharge Measurements of English River at Manitou Falls in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 26....	Binns, P. V	274	5,947	.91	89.85	5,384(a)	.....
Mar. 18....	"	170	3,011	1.46	88.68	4,402(b)	.....
May 31....	"	189	3,754	2.38	92.79	8,925	.....
June 18....	Carmichael, R.M	190	3,809	2.48	93.10	9,435	.....
July 14....	"	193	3,946	2.56	93.72	10,103	.....
Sept. 6....	"	183	3,638	2.19	92.22	7,951	.....
Oct. 17....	"	184	3,712	2.35	92.60	8,728	.....

(a) Ice measurement 250 feet above regular section.
(b) Boat measurement at regular section. Slabs of thick ice lining banks. Narrow open channel to falls; ice covered 200 feet above section.

Daily Gauge Height and Discharge of English River at Manitou Falls for 1914-5

Drainage Area, 14,600 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.
1											88.51	4320			92.93	9060							92.05	7910
2							89.69	5220	89.29	4880	88.47	4290	89.97	5490			93.47	9760	93.37	9630				
3																								
4											88.42	4260	90.29	5810	92.82	8920					92.16	8060		
5							89.74	5270	88.96	4610	88.32	4210	90.39	5920										
6											88.32	4210					93.24	9460	93.13	9320			92.47	8460
7																								
8													90.74	6300	92.72	8790					92.05	7910		
9							89.74	5270	88.86	4540	88.37	4230											92.05	7910
10											88.32	4210					93.37	9630	93.13	9320	90.89	6480		
11											88.24	4170	91.50	7210	92.93	9060								
12							89.79	5310	88.86	4540	88.37	4230											92.24	8160
13											88.37	4230							92.92	9050				
14											88.42	4260	92.06	7930							90.93	6530		
15											88.42	4260											92.47	8460
16							89.74	5270	88.86	4540	88.47	4290					93.69	10050					92.42	8400
17											88.51	4320	92.16	8060					92.92	9050	91.40	7090		
18											88.51	4320			93.13	9320								
19							89.42	4990			88.51	4320											91.82	7620
20									88.65	4400	88.76	4470					93.59	9920	92.72	8790				
21									88.70	4430	88.81	4510												
22											88.86	4540			93.03	9190							92.05	7910
23							89.47	5030	88.70	4430	88.96	4620					93.59	9920						
24									88.65	4400	89.07	4710							92.37	8330	91.82	7620		
25											89.18	4790			93.13	9320					91.60	7330		
26							89.18	4790	88.65	4400	89.37	4950											91.82	7620
27											89.52	5070					93.47	9790	92.13	8060				
28									88.51	4320	89.64	5180									91.93	7760		
29															93.37	9630							91.60	7330
30									88.58	4360	89.73	5260					93.47	9760						
31																			92.47	8460				

NOTE.—Gauge heights interpolated from those read at Ear Falls and discharges applied from Manitou Falls rating curve.

Monthly Discharge of English River at Manitou Falls for 1914-5

Drainage Area, 14,600 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November. (1914)	.....	.....	.....	.....	.....	.....	.....
December. "	.....	.....	.....	.....	.....	.....	.....
January ..(1915)	.....	.....	.....	.....	.....	.....	.....
February	5,310	4,790	5,144	.36	.33	.35	.36
March	4,880	4,320	4,488	.33	.30	.31	.36
April	5,260	4,170	4,307	.36	.29	.29	.32
May	8,060	5,490	6,674	.55	.38	.46	.53
June.....	9,630	8,790	9,161	.66	.60	.63	.70
July	10,050	9,460	9,786	.69	.65	.67	.77
August	9,630	8,060	8,890	.66	.55	.61	.70
September	8,060	6,480	7,347	.55	.44	.50	.56
October.....	8,460	7,330	7,978	.58	.50	.54	.62
The period.....	10,050	4,170	6,500	.69	.29	.44	4.92

English River near Oak Falls

Location—About one mile above the upper fall of Oak Falls, and about one-half mile below Wilcox Lake, District of Kenora.

Records Available—Discharge measurements from August, 1914, to October, 1915. Bi-weekly gauge heights interpolated from observations at Ear Falls from February 1 to October 31, 1915.

Drainage Area—15,570 square miles.

Gauge—Vertical staff with enamelled face screwed to a cedar post and firmly wedged in rock on the right bank 200 feet above the metering section. The zero on the gauge (elev. 194.09) is referred to a bench mark (elev. 200.00) painted on a rock in the river near the right bank and 20 feet above the final point for soundings. The initial point for soundings is located on the left bank, and con ists of the head of a nail driven in the side of a 12-inch poplar blazed and marked I.P., N. 70° W.

Channel and Control—Straight for about 300 feet above and ½ mile below the station. Both banks are high, rocky and wooded, and not liable to overflow. The bed of the stream is rocky and practically permanent. The current is sluggish above and moderately swift below the station, a small rapid existing about 800 feet below.

Discharge Measurements—Made from a canoe with a small Price current meter.

Remarks—The very steady regimen of the English River, together with the lack of gauge readers, makes it possible and necessary to apply the gauge heights at Ear Falls to the gauge at Oak Falls. Gauge readings taken on nearly the same day were used in making up curves for the two stations, and the results obtained justify the assumptions made. No allowance is made for lag.

Discharge Measurements of English River near Oak Falls in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Feb. 1.....	Binns, P. V.....	373	6,071	.99	195.02	6,035(a)	
Mar. 15....	"	371	5,921	.84	194.48	4,958(b)	
May 29....	"	390	6,774	1.43	196.53	9,662	
June 20....	Carmichael, R.M	392	6,812	1.45	196.63	9,890	
July 17....	"	396	6,970	1.55	196.97	10,812	
Sept. 8....	"	385	6,615	1.25	196.15	8,268	
Oct. 19....	"	389	6,734	1.39	196.42	9,358	

(a) Ice covered. Open water 300 feet down stream.
(b) Section nearly all open. Ice cover above and below ; boat and ice measurement.

Daily Gauge Height and Discharge of English River near Oak Falls for 1914-5

Drainage Area, 15,570 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1											194.37	4850			196.57	9620							196.14	8410
2							194.95	5820	194.74	5 540	194.34	4810	195.09	6080	196.51	9440	196.85	10500	196.80	10340				
3																					196.19	8540		
4											194.31	4770	195.25	6400										
5							194.97	5870	194.59	5200	194.25	4700	195.30	6500									196.35	8980
6											194.25	4700					196.72	10080	196.67	9930				
7																					196.14	8410		
8													195.48	6890	196.46	9290							196.14	8410
9							194.97	5870	194.53	5110	194.29	4740												
10											194.25	4700					196.80	10340	196.67	9930	195.69	7340		
11											194.23	4650	195.85	7700										
12							195.00	5910	194.53	5110	194.29	4740	196.14	8410	196.57	9620							196.24	8680
13											194.29	4740							196.57	9620				
14											194.31	4770									195.58	7100		
15											194.31	4770											196.35	8980
16							194.97	5870	194.53	5110	194.34	4810					196.98	10920					196.32	8900
17											194.37	4850	196.19	8540					196.57	9620	195.80	7590		
18											194.37	4850			196.67	9930								
19							184.82	5590			194.37	4850											196.01	8080
20									194.43	4950	194.48	5030					196.90	10660	196.46	9290				
21									194.46	5000	194.51	5080												
22											194.53	5110			196.62	9770							196.14	8410
23							194.84	5620	194.46	5000	194.59	5200					196.90	10660						
24									194.43	4950	194.64	5280							196.29	8810	196.01	8080		
25											194.69	5360			196.67	9920					195.91	7840		
26							194.69	5360	194.43	4950	194.78	5520											196.01	8080
27											194.87	5680					196.85	10500	196.19	8540				
28									194.37	4850	194.92	5770									196.06	8210		
29															196.80	10340							195.91	7840
30									194.39	4880	194.97	5870												
31																	196.85	10500	196.35	8980				

NOTE.—Gauge heights interpolated from those read at Ear Falls and discharges applied from Oak Falls rating curve.

Monthly Discharge of English River near Oak Falls for 1914-5

Drainage Area, 15,570 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	.....	.....	.....	.....	.....	.....	.....
December. "	.....	.....	.....	.....	.....	.....	.....
January ...(1915)	.....	.....	.....	.....	.....	.....	.....
February	5,910	5,360	5,739	.38	.34	.37	.38
March	5,450	4,880	5,047	.35	.31	.32	.37
April.	5,870	4,650	5,001	.37	.30	.32	.36
May.	8,540	6,080	7,217	.55	.39	.46	.53
June.....	10,340	9,290	9,741	.66	.60	.63	.70
July	10,920	10,080	10,520	.70	.65	.68	.78
August	10,340	8,540	9,451	.66	.55	.61	.70
September	8,540	7,100	7,889	.55	.46	.51	.57
October.....	8,980	7,840	8,477	.58	.50	.57	.66
The period.....	10,920	4,650	7,106	.70	.30	.46	5.05

English River at Sturgeon Falls

Location—About 300 feet above the lowest of the three falls known as Sturgeon Falls, District of Kenora, and about 30 miles above the Winnipeg River.

Records Available—Discharge measurements from June, 1914, to August, 1915.

Drainage Area—Not measured.

Gauge—Vertical staff with enamelled face, screwed to a 5" hewn spruce post firmly wedged and braced to the left bank about 150 feet below the metering section. The zero on the gauge (elevation 91.52) is referred to a bench mark (elevation 100.00) painted on the left bank 10 feet from the initial point and two feet below the line of section. The initial point for soundings is a nail driven in the side of a 6-inch blazed poplar on the left bank, and marked I.P., N. 10° E.

Channel and Control—There are deep bays on both sides of the river above the station, from which the channel takes a gentle curve to the left, thence flowing comparatively straight and narrowing to the station and falls. The bed is composed of rock with a little gravel in the centre, and practically permanent. Both banks are high, rocky and wooded, and will not overflow. The velocity is low at the right bank, and very slight backwater existing at the left.

Discharge Measurements—Made from a canoe with a small Price current meter.

Discharge Measurements of English River at Sturgeon Falls in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
May 12....	Binns, P. V	348	8,195	1.12	92.02	9.172	.....
July 14....	"	377	8,987	1.36	94.26	12.278	.....
Aug. 17....	Carmichael, R.M	360	8,766	1.28	93.69	11.247	.....

Footprint River at Rainy Lake Falls

Location—100 feet above the crest of the lowest fall, at the mouth of the Footprint River where it flows into the north-west bay of Rainy Lake, on Indian Reserve 17A, District of Rainy River.

Records Available—Monthly discharge measurements from July, 1914. Daily gauge heights, Sept. 18, 1914, to Oct. 31, 1915.

Drainage Area—425 square miles.

Gauge—Vertical steel staff gauge, graduated in feet and in inches. The zero on the gauge (elevation 101.30) is referred to a bench mark (elevation 110.51) painted on the ledge of a rock on right bank.

Channel—About 40 feet above the station the channel curves to the left and then runs straight for about 140 feet, dropping into Rainy Lake. The banks are high, rocky, wooded, and not liable to overflow. The right bank has been burnt over. The bed of the river contains large boulders, and one channel exists at all stages.

Discharge Measurements—Made from canoe with small Price current meter.

Winter Flow—Relation to gauge height to discharge not affected by ice.

Regulation—Occasional operations of the dam at Footprint Lake cause fluctuations in the river at the gauge.

Accuracy—The rating curve is well defined. Open water curve used throughout the year.

Observer—John Lyons, Fort Frances P.O.

Discharge Measurements of Footprint River at Rainy Lake Falls in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 30....	Taylor, J. R....	47	62	2.04	101.78	126	.....
Feb. 2....	"	47	62	1.94	101.78	120	.....
Mar. 6....	"	45	62	1.79	101.61	110	.....
Apr. 2....	"	45	58	1.69	101.55	97	.....
" 2....	"	45	58	1.69	101.55	97	.....
June 23....	"	62	153	3.61	103.44	552	.....
July 30....	"	60	136	3.13	103.06	427	.....
Aug. 24....	"	54	97	2.24	102.38	217	.....
Sept. 8....	"	53	86	1.68	102.09	145	.....
" 29....	"	45	53	1.45	101.40	77	.....

Daily Gauge Height and Discharge of Footprint River at Rainy Lake Falls for 1914-5

Drainage Area 425 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*
1	101.50	90	101.61	101	101.61	101	101.78	127	101.65	107	101.55	95	101.57	97	103.78	755	103.48	605	102.97	389	102.26	207	101.42	82
2	101.49	89	101.61	101	101.61	101	101.78	127	101.65	107	101.55	95	101.57	97	103.76	745	103.48	605	102.92	372	102.26	207	101.40	80
3	101.49	89	101.61	101	101.61	101	101.78	127	101.61	101	101.55	95	101.57	97	103.76	745	103.48	605	102.92	372	102.15	181	101.34	74
4	101.49	89	101.61	101	101.61	101	101.61	101	101.61	101	101.55	95	101.63	104	103.76	745	103.40	565	102.88	359	102.15	181	101.34	74
5	101.49	89	101.61	101	101.61	101	101.61	101	101.61	101	101.40	80	101.63	104	103.76	745	103.40	565	102.88	359	102.15	181	101.34	74
6	101.49	89	101.61	101	101.61	101	101.78	127	101.61	101	101.40	80	101.63	104	103.78	755	103.40	565	102.88	359	102.15	181	101.38	78
7	101.49	89	101.61	101	101.61	101	101.78	127	101.63	104	101.40	80	101.63	104	103.78	755	103.40	565	102.88	359	102.09	173	101.38	78
8	101.49	89	101.61	101	101.61	101	101.78	127	101.63	104	101.40	80	101.55	95	103.78	755	103.40	565	102.88	359	102.07	170	101.38	78
9	101.49	89	101.61	101	101.61	101	101.78	127	101.63	104	101.40	80	101.53	93	103.78	755	103.38	555	102.88	359	102.05	167	101.38	78
10	101.49	89	101.61	101	101.61	101	101.78	127	101.63	104	101.40	80	101.53	93	103.78	755	103.38	555	102.84	336	102.05	167	101.38	78
11	101.49	89	101.61	101	101.61	101	101.78	127	101.63	104	101.40	80	101.53	93	103.78	755	103.38	555	102.84	336	102.05	167	101.38	78
12	101.49	89	101.61	101	101.61	101	101.78	127	101.63	104	101.40	80	101.53	93	103.82	777	103.38	555	102.84	336	101.92	148	101.38	78
13	101.49	89	101.61	101	101.65	107	101.78	127	101.63	104	101.40	80	101.53	93	103.78	755	103.38	555	102.84	336	101.92	148	101.40	80
14	101.49	89	101.61	101	101.78	127	101.65	107	101.63	104	101.40	80	101.55	95	103.78	755	103.38	555	102.88	359	101.92	148	101.40	80
15	101.49	89	101.61	101	101.78	127	101.65	107	101.65	107	101.40	80	101.57	97	103.78	755	103.38	555	102.80	335	101.88	142	101.38	78
16	101.49	89	101.61	101	101.78	127	101.65	107	101.63	104	101.40	80	101.57	97	103.78	755	103.38	555	102.80	335	101.80	130	101.38	78
17	101.49	89	101.61	101	101.78	127	101.65	107	101.63	104	101.40	80	101.57	97	103.53	630	103.38	555	102.80	335	101.76	124	101.38	78
18	101.49	89	101.61	101	101.78	127	101.65	107	101.63	104	101.40	80	101.57	97	103.53	630	103.38	555	102.80	335	101.76	124	101.38	78
19	101.49	89	101.61	101	101.78	127	101.65	107	101.63	104	101.40	80	104.07	1027	103.53	630	103.38	555	102.76	325	101.72	118	101.38	78
20	101.49	89	101.61	101	101.78	127	101.65	107	101.63	104	101.40	80	104.07	1027	103.44	585	103.38	555	102.55	272	101.72	118	101.38	78
21	101.49	89	101.61	101	101.78	127	101.65	107	101.63	104	101.40	80	103.99	879	103.44	585	103.38	555	102.42	240	101.72	118	101.38	78
22	101.49	89	101.61	101	101.78	127	101.65	107	101.63	104	101.40	80	104.03	1003	103.44	585	103.38	555	102.42	240	101.68	112	101.38	78
23	101.61	101	101.61	101	101.78	127	101.65	107	101.63	104	101.40	80	104.03	1003	103.44	585	103.38	555	102.38	231	101.55	95	101.38	78
24	101.61	101	101.61	101	101.78	127	101.65	107	101.63	104	101.40	80	104.03	1003	103.46	595	103.38	555	102.38	231	101.47	87	101.38	78
25	101.61	101	101.61	101	101.78	127	101.65	107	101.63	104	101.44	84	104.03	1003	103.46	595	103.05	417	102.28	231	101.38	78	101.38	78
26	101.61	101	101.61	101	101.78	127	101.65	107	101.63	104	101.49	89	103.99	879	103.46	595	103.05	417	102.42	240	101.38	78	101.38	78
27	101.61	101	101.61	101	101.78	127	101.65	107	101.63	104	101.49	89	103.95	855	103.50	615	103.05	417	102.42	240	101.38	78	101.34	74
28	101.61	101	101.61	101	101.78	127	101.65	107	101.63	104	101.53	93	103.95	855	103.50	615	103.05	417	102.30	215	101.38	78	101.34	74
29	101.61	101	101.61	101	101.78	127	.....	.....	101.55	95	101.53	93	103.95	855	103.48	605	103.01	403	102.30	215	101.38	78	101.34	74
30	101.61	101	101.61	101	101.78	127	.....	.....	101.55	95	101.57	97	103.78	755	103.48	605	103.01	403	102.30	215	101.38	78	101.34	74
31	.....	.....	101.61	101	101.78	127	.....	.....	101.55	95	.....	.....	103.78	755	.....	.....	102.97	389	102.30	215	.....	.....	101.34	74

Monthly Discharge of Footprint River at Rainy Lake Falls for 1914-5

Drainage Area, 425 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	101	89	92	.24	.21	.22	.25
December "	101	101	101	.24	.24	.24	.28
January.. (1915)	127	101	116	.30	.24	.27	.31
February	127	101	114	.30	.24	.27	.28
March	107	95	103	.25	.22	.24	.28
April	97	80	85	.23	.19	.20	.22
May	1,027	93	440	2.42	.22	1.03	1.19
June	777	585	683	1.83	1.38	1.61	1.80
July.....	605	389	522	1.42	.92	1.23	1.42
August	389	215	322	.92	.51	.76	.88
September.....	207	78	135	.49	.18	.32	.36
October	82	74	77	.19	.17	.18	.21
The year	1,027	74	233	2.42	.17	.55	7.48

Manitou River at Devil's Cascades

Location—About 150 feet below the old dam, at the head of the Devil's Cascades, Rainy River District.

Records Available—Monthly discharge measurements from July, 1914. Daily gauge heights, July 15, 1914, to Oct. 31, 1915.

Drainage Area—435 square miles.

Gauge—An inclined steel staff, graduated in feet and inches, and located on the face of the old dam. The zero of the gauge is at an elevation of 139.38 feet referred to a bench mark (elevation 147.37) painted on a rock 1 foot east of the initial point for soundings.

Channel—Straight for about 150 feet above and 400 feet below the station. The right bank is high, rocky, wooded, and not liable to overflow, but the left bank is low and wooded, with a gradually rising bank, which is not liable to overflow unless the dam is operated. The bed of the stream is composed of rock, and the current is slow, one channel existing at all stages.

Discharge Measurements—Made from canoe or ice with a small Price current meter.

Winter Flow—The relation of gauge height to discharge is affected by ice during the cold period, and measurements are made to determine the winter flow.

Regulation—Several dams exist on the river between the section and Manitou Lake, which are not in operation at present. The operation of the dam just above the station causes fluctuations at the gauge.

Accuracy—A fairly well-defined rating curve has been developed, and records are considered fair.

Observer—S. H. Baldwin, Box No. 250, Fort Frances.

Discharge Measurements of Manitou River at Devil's Cascades in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 31....	Taylor, J. R. ...	97	435	0.41	143.57	180	.....
Feb. 1....	"	97	435	0.43	143.58	187	.....
Mar. 5....	"	97	426	0.43	143.53	186	.....
Apr. 1....	"	97	416	0.43	143.44	179	.....
May 19....	"	99	487	0.58	144.12	280	.....
June 23....	"	99	496	0.58	144.21	288	.....
July 31....	"	99	493	0.65	144.24	319	.....
Aug. 25....	"	99	465	0.58	143.93	269	.....
Sept. 8....	"	98	455	0.53	143.80	239	.....

Daily Gauge Height and Discharge of Manitou River at Devil's Cascades for 1914-5

Drainage Area, 435 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	143.82	222	143.88	201	143.63	188	143.57	183	143.53	186	143.44	179	143.80	219	143.88	232	144.42	352	144.21	300	143.86	229	143.73	209
2	143.82	222	143.88	201	143.63	188	143.57	183	143.53	186	143.46	179	143.80	219	143.86	229	144.42	352	144.19	296	143.86	229	143.76	213
3	143.82	222	143.86	200	143.63	187	143.55	183	143.53	186	143.48	179	143.82	222	143.84	225	144.42	352	144.17	291	143.84	225	143.78	216
4	143.80	219	143.86	200	143.63	187	143.55	184	143.53	186	143.50	179	143.84	225	143.80	219	144.42	352	144.17	291	143.84	225	143.76	213
5	143.80	219	143.86	199	143.63	187	143.55	184	143.53	186	143.53	179	143.86	229	143.84	225	144.38	342	144.15	286	143.82	222	143.76	213
6	143.80	219	143.84	199	143.63	186	143.55	184	143.53	186	143.50	180	143.86	229	143.88	232	144.38	342	144.15	286	143.82	222	143.76	213
7	143.78	216	143.84	199	143.63	186	143.53	184	143.53	186	142.53	180	143.88	232	143.88	232	144.36	337	144.15	286	143.80	219	143.76	213
8	143.73	209	143.82	198	143.63	186	143.53	184	143.53	186	143.55	180	143.98	249	143.86	229	144.34	332	144.15	286	143.80	219	143.76	213
9	143.73	209	143.80	198	143.63	186	143.53	184	143.50	186	143.57	180	144.03	259	143.90	235	144.32	327	144.15	286	143.80	219	143.76	213
10	143.71	206	143.78	198	143.63	185	143.55	184	143.50	185	143.59	181	144.07	268	143.94	242	144.30	322	144.15	286	143.78	216	143.73	209
11	143.73	209	143.80	197	143.63	185	143.55	184	143.48	185	143.61	181	144.11	276	143.98	249	144.30	322	144.13	281	143.78	216	143.73	209
12	143.76	213	143.80	197	143.63	185	143.55	184	143.48	185	143.63	182	144.13	281	144.07	268	144.30	322	144.13	281	143.76	213	143.71	206
13	143.80	219	143.80	197	143.61	185	143.55	184	143.48	185	143.65	182	144.15	286	144.19	296	144.30	322	144.09	272	143.73	209	143.71	206
14	143.84	225	143.78	197	143.61	185	143.57	185	143.46	185	143.67	183	144.15	286	144.17	291	144.30	322	144.07	268	143.73	209	143.69	204
15	143.88	212	143.75	197	143.61	185	143.57	185	143.46	184	143.69	183	144.13	281	144.15	286	144.30	322	144.05	263	143.71	206	143.71	206
16	143.88	211	143.73	196	143.61	184	143.57	185	143.48	184	143.67	201	144.13	281	144.19	296	144.30	322	144.05	263	143.71	206	143.71	206
17	143.88	210	143.73	195	143.61	184	143.55	185	143.48	184	143.65	199	144.13	281	144.21	300	144.28	317	144.02	257	143.73	209	143.69	204
18	143.88	210	143.71	195	143.61	184	143.55	185	143.48	184	143.63	197	144.13	281	144.21	300	144.28	317	144.02	257	143.73	209	143.67	201
19	143.88	209	143.69	194	143.61	184	143.55	185	143.48	183	143.63	197	144.11	276	144.21	300	144.28	317	144.00	253	143.73	209	143.67	201
20	143.88	209	143.69	193	143.59	184	143.55	185	143.46	183	143.63	197	144.09	272	144.21	300	144.28	317	143.98	249	143.71	206	143.65	199
21	143.88	208	143.67	193	143.59	184	143.57	185	143.46	183	143.63	197	144.05	263	144.23	305	144.28	317	143.98	249	143.73	209	143.65	199
22	143.88	208	143.67	192	143.59	184	143.57	185	143.46	182	143.65	199	144.03	259	144.21	300	144.28	317	143.96	246	143.73	209	143.63	197
23	143.86	206	143.65	192	143.59	184	143.57	185	143.44	182	143.65	199	143.98	249	144.21	300	144.28	317	143.96	246	143.73	209	143.63	197
24	143.86	205	143.65	191	143.59	183	143.57	185	143.44	182	143.67	201	143.98	249	144.21	300	144.30	322	143.94	242	143.73	209	143.61	194
25	143.86	205	143.63	191	143.59	183	143.55	186	143.44	182	143.69	204	143.96	246	144.26	312	144.30	322	143.92	242	143.73	209	143.59	192
26	143.86	204	143.63	190	143.59	183	143.55	186	143.46	182	143.71	206	143.96	246	144.26	312	144.30	322	143.92	242	143.71	206	143.59	192
27	143.88	203	143.63	190	143.59	183	143.55	186	143.46	182	143.73	209	143.96	246	144.30	322	144.30	322	143.90	235	143.71	206	143.59	192
28	143.88	203	143.63	190	143.57	183	143.53	186	.....	180	143.76	213	143.96	246	144.31	324	144.28	317	143.90	235	143.71	206	143.57	190
29	143.88	202	143.63	189	143.57	183	.....	.....	.....	180	143.78	216	143.94	242	144.38	342	144.28	317	143.90	235	143.71	206	143.57	190
30	143.88	202	143.63	189	143.57	183	.....	.....	.....	180	143.80	219	143.92	242	144.42	352	144.26	312	143.88	232	143.71	206	143.55	188
31	.....	.....	143.63	188	143.57	183	.....	.....	.....	179	.....	.....	143.90	235	.....	.....	144.23	305	143.88	232	.....	.....	143.55	188

Monthly Discharge of Manitou River at Devil's Cascades for 1914-5

Drainage Area, 435 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November.(1914)	225	202	211	.52	.46	.49	.55
December. "	201	188	195	.46	.43	.45	.52
January ..(1915)	188	183	185	.44	.42	.43	.50
February.....	186	183	185	.43	.42	.43	.45
March.....	186	179	184	.43	.41	.42	.48
April.....	219	179	192	.50	.41	.44	.49
May.....	286	219	254	.66	.50	.58	.67
June	352	219	278	.81	.50	.64	.71
July.....	352	305	326	.81	.70	.75	.86
August.....	300	232	264	.69	.53	.61	.70
September.....	229	206	213	.53	.47	.49	.55
October.....	216	188	206	.50	.43	.47	.54
The year	352	179	225	.81	.41	.51	7.02

Seine River at Skunk Rapids

Location—About 200 feet above Skunk Rapids, and 1 mile upstream from the Canadian Northern Ry. bridge. One-half mile north of the C. N. Ry. tracks, and 1 mile west of La Seine Station, in the District of Rainy River.

Records Available—Discharge measurements from August, 1914. Daily gauge heights, Sept. 22, 1914, to April 30, 1915, and Oct. 1 to 31, 1915.

Drainage Area—2,300 square miles.

Gauge—Vertical steel staff gauge with enamelled face, graduated in feet and inches, and located near La Seine station, on the C. N. Ry. The zero on the gauge is at an elevation of 87.72 feet, which is referred to a bench mark (assumed elevation 100.00) painted on a large boulder, on the right bank of the river, 6 feet from a 6 inch poplar tree used as a final point for soundings. The initial point is on the left bank and consists of a 2-inch spruce tree, blazed and marked I.P. with white paint. "H. E. P. Comm." is painted on the rock directly below the spruce tree.

Channel and Control—Straight for about 500 feet above and 200 feet below the station to the rapids. The right bank of the river curves into a point at the rapids forming a narrow channel. The velocity of the river is slow and the banks are high, rocky and wooded. This land has been burnt over, but most of the trees are still standing. The bed of the stream is sandy and clean, with a few boulders near the right bank. One channel exists at all stages.

Discharge Measurements—Made from canoe with a small Price current meter.

Winter Flow—The relation of gauge height to discharge is affected by ice during the winter months and measurements are made to determine the winter flow.

Accuracy—Open water rating curve is fairly well defined and estimates are considered good.

Observer—Wm. Clark. Flanders.

Discharge Measurements of Seine River at Skunk Rapids in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 27....	Taylor, J. R	173	1,585	.39	95.50	620 (a)	.....
Feb. 26....	"	168	1,486	.36	95.12	543 (b)	.....
Mar. 29....	"	167	1,554	.30	94.97	469 (a)	.....
April 5....	"	167	1,641	.28	94.84	459	.....
May 20....	"	197	2,059	.75	95.86	1,540	.....
June 28....	"	206	2,280	1.12	97.96	2,553	.....
July 23....	"	203	2,179	.97	97.54	2,117	.....
" 24....	"	203	2,217	.98	97.63	2,185	.....
Aug. 30....	"	187	1,886	.54	96.12	1,026	.....
" 31....	"	187	1,886	.53	96.07	1,008	.....
Sept. 1....	"	187	1,886	.53	96.03	1,005	.....
" 1....	"	188	1,867	.53	95.99	990	.....
Oct. 1....	"	189	1,942	.59	96.32	1,154	.....

(a) Ice measurement.
(b) Ice measurement; river frozen to rapids; rapids free of ice.

Daily Gauge Height and Discharge of Seine River at Skunk Rapids for 1914-5

Drainage Area, 2,300 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	96.74	1400	96.58	1070	95.83	800	95.53	604	95.04	535	.....	460	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.32	1137
2	96.72	1385	96.56	1072	95.75	792	95.49	600	95.03	532	.....	458	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.34	1148
3	96.74	1400	96.56	1074	95.76	782	95.47	597	95.03	530	.....	457	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.34	1148
4	96.73	1392	96.55	1077	95.74	774	95.50	595	.....	527	.....	458	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.36	1159
5	96.72	1385	96.53	1080	95.70	766	95.50	594	.....	523	94.87	459	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.34	1148
6	96.72	1385	96.51	1080	95.69	758	95.50	592	.....	520	95.01	459	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.36	1159
7	96.72	1385	96.49	1080	95.67	751	95.45	588	.....	517	95.18	459	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.41	1187
8	96.72	1385	96.48	1075	95.65	744	95.45	586	.....	514	95.93	459	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.45	1215
9	96.72	1385	96.45	1070	95.62	736	95.45	583	.....	511	96.14	459	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.49	1243
10	96.70	1370	96.41	1060	95.62	727	95.42	582	.....	509	96.10	459	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.47	1229
11	96.68	1140	96.37	1045	95.03	720	95.38	579	.....	507	96.10	459	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.55	1280
12	96.64	1135	96.31	1010	95.04	774	95.38	577	.....	505	95.80	479	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.60	1286
13	96.68	1130	96.27	990	95.04	707	95.34	576	.....	503	95.75	500	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.64	1334
14	96.69	1125	96.24	970	95.05	700	95.32	575	.....	500	95.70	522	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.66	1346
15	97.69	1120	96.19	955	95.05	694	95.29	572	.....	495	95.71	545	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.70	1370
16	96.68	1115	96.18	940	95.05	687	95.27	572	.....	494	95.60	569	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.72	1385
17	96.63	1110	96.15	932	95.06	680	95.25	571	.....	494	95.46	594	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.74	1400
18	96.62	1105	96.10	920	95.06	673	95.23	570	.....	489	95.39	620	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.80	1445
19	96.62	1102	96.07	910	95.06	666	95.22	572	.....	485	95.38	647	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.82	1460
20	96.60	1098	96.03	898	95.07	660	95.20	571	.....	482	95.32	675	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.89	1512
21	96.59	1095	96.04	890	95.07	652	95.18	572	.....	478	95.33	704	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.93	1544
22	96.58	1090	96.03	880	95.07	648	95.15	571	.....	477	95.34	734	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	96.98	1584
23	96.60	1087	96.01	870	96.08	642	95.13	567	.....	476	95.36	765	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	97.02	1618
24	96.57	1085	96.00	860	95.44	635	95.10	560	.....	474	95.42	797	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	97.07	1663
25	96.56	1083	95.98	850	95.50	630	95.09	549	.....	472	95.49	830	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	97.16	1747
26	96.56	1080	95.96	840	95.51	625	95.07	543	.....	471	95.52	864	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	97.18	1766
27	96.54	1077	95.93	834	95.51	620	95.07	540	.....	470	95.55	899	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	97.20	1785
28	96.54	1074	95.88	827	95.51	615	95.06	537	.....	469	95.63	935	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	97.24	1821
29	96.55	1070	95.83	820	95.52	611	.....	.....	.....	469	95.62	972	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	97.30	1875
30	96.55	1070	95.79	813	95.52	610	.....	.....	.....	464	95.62	1010	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	97.32	1893
31	.....	.....	95.76	807	95.50	606	.....	.....	.....	462	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	97.34	1911

NOTE.—Relation of gauge height to discharge affected by ice from Nov. 11th, 1914, to April 19th, 1915; discharge for the period estimated from discharge measurements, observer's notes, and climatologic records.

Monthly Discharge of Seine River at Skunk Rapids for 1914-5

Drainage Area, 2,300 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November. (1914)	1,400	1,070	1,195	.61	.47	.52	.58
December. "	1,080	807	955	.47	.35	.42	.48
January .. (1915)	800	606	692	.35	.26	.30	.35
February	604	537	575	.26	.23	.25	.26
March.....	535	462	495	.23	.20	.22	.25
April	1,010	457	624	.44	.20	.27	.30
May.....	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July.....	.....	.....	.....	.....	.....	.....	.....
August	.....	.....	.....	.....	.....	.....	.....
September.....	.....	.....	.....	.....	.....	.....	.....
October.....	.....	.....	.....	.....	.....	.....	.....
The period.....	1,400	457	757	.61	.20	.33	2.22

Turtle River at Mountain Rapids

Location—About 300 feet above Mountain Rapids, and about 8 miles from the Olive Mine. 12 miles from Mine Centre, which is on the C. N. Ry., in the Rainy River District.

Records Available—Monthly discharge measurements from August, 1914. Daily gauge heights, Aug. 9, 1914, to Oct. 31, 1915.

Drainage Area—1,760 square miles.

Gauge—Vertical steel staff gauge with enamelled face, graduated in feet and inches, and fastened on a crib pier at the C. N. Ry. saw mill, 12 miles from the station. The gauge is located 1,000 feet south of the mouth of Little Turtle River, on the east shore of Little Turtle Lake. Zero on gauge (elevation 83.89) is referred to a bench mark established on a rock with white paint, on the left bank of the river, four feet south of a blazed pine tree, marked I.P. with white paint, which is used as the initial point for soundings. The elevation of this bench mark is 96.00, which is referred to another bench mark (assumed elevation 160.00) established on a rock with white paint, 35 feet north-east of the gauge, at the C. N. Ry. Mill at Mine Centre.

Channel and Control—Straight for about 1,000 feet above and below the station, the water running slowly. The banks are high, wooded and rocky. The bed of the stream is sandy and clean, one channel existing at all stages. The river is used extensively for log driving, and the log jams in Otter Falls affect the section somewhat.

Discharge Measurements—Made from a canoe with a small Price current meter.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice and measurements are made during the winter to determine the flow.

Accuracy—Open water rating curve fairly well defined between gauge heights 91.5 and 94.5. The relation of gauge height to discharge during the log-driving period is affected by back water from log jams.

Observer—Ruby F. Smith, Mine Centre.

Discharge Measurements of Turtle River at Mountain Rapids in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 20....	Taylor, J. R....	156	2,446	.08	90.06	184 (a)	.....
Feb. 28....	"	156	2,346	.08	90.04	184 (a)	.....
Mar. 2....	"	119	894	.23	90.04	209 (b)	.....
" 30....	"	118	892	.27	90.01	244 (b)	.....
Apr. 7....	"	120	904	.28	90.13	248 (b)	.....
May 20....	"	169	2,966	.43	92.67	1,283	.....
June 26....	"	173	3,303	.78	94.70	2,592 (c)	.....
July 22....	"	172	3,205	.69	94.20	2,235	.....
" 29....	"	172	3,237	.72	94.17	2,322	.....
Aug. 7....	"	170	3,117	.56	93.35	1,747	.....
" 26....	"	166	2,897	.38	92.18	1,107	.....
Sept. 4....	"	166	2,848	.32	91.89	914	.....
" 4....	"	166	2,848	.32	91.89	895	.....
" 5....	"	165	2,829	.31	91.77	866	.....
" 5....	"	165	2,829	.32	91.77	912	.....
" 5....	"	165	2,815	.30	91.72	838	.....
" 6....	"	165	2,815	.30	91.66	850	.....
Sept. 30....	"	165	2,782	.22	91.45	604	.....
" 30....	"	165	2,782	.22	91.45	616	.....

(a) Ice measurement; river partly covered with ice below section; small log jam in Otter Falls.
(b) Measurement made 70 ft below regular section.
(c) Lumber companies driving on Little Turtle Lake and Turtle River; jam of logs in centre of river 70 feet below section. Otter Falls clear of logs.

Daily Gauge Height and Discharge of Turtle River at Mountain Rapids for 1914-5

Drainage Area, 1,760 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*
1	92.70	1355	91.49	847	90.14	184	90.01	180	90.04	198	89.97	242	91.85	890	93.06	1561	94.97	2847	93.83	2034	92.06	995	91.45	702
2	92.60	1295	91.47	838	90.12	183	90.04	180	90.04	199	89.97	244	91.81	870	92.81	1411	94.85	2757	93.70	1950	92.01	970	91.47	711
3	92.56	1271	91.47	824	90.12	182	90.04	180	90.01	199	89.97	246	91.77	850	92.89	1459	94.72	2660	93.64	1911	91.97	950	91.45	702
4	92.62	1170	91.45	810	90.10	182	90.04	181	90.01	200	89.97	246	91.77	850	92.89	1459	94.66	2615	93.56	1861	91.89	910	91.47	711
5	92.62	1162	91.45	792	90.08	182	90.06	182	90.01	202	90.01	247	91.72	825	92.99	1519	94.64	2600	93.51	1831	91.77	850	91.47	711
6	92.47	1156	91.40	740	90.10	182	90.06	182	90.01	202	90.06	247	91.68	806	93.14	1609	94.56	2542	93.44	1789	91.66	797	91.47	711
7	92.46	1150	91.32	682	90.10	182	90.06	183	89.99	203	90.06	247	91.83	870	93.22	1657	94.51	2507	93.37	1749	91.51	729	91.47	711
8	92.38	1147	91.22	635	90.10	182	90.04	183	89.97	206	90.14	250	92.22	1081	93.22	1657	94.43	2451	93.30	1705	91.43	693	91.47	711
9	92.31	1142	91.14	590	90.08	182	90.04	184	89.97	208	90.22	257	92.51	1241	93.14	1609	94.35	2395	93.22	1657	91.39	675	91.56	752
10	92.29	1135	91.04	545	90.06	182	90.04	184	89.97	209	90.35	270	92.64	1319	93.12	1597	94.30	2360	93.12	1597	91.39	675	91.56	752
11	92.21	1125	90.95	500	90.06	181	90.04	185	89.97	210	90.60	280	92.68	1343	93.18	1623	94.25	2325	93.04	1549	91.31	639	91.58	761
12	92.13	1114	90.87	470	90.06	181	90.04	185	89.97	212	90.64	290	92.72	1367	93.35	1736	94.22	2304	92.93	1483	91.21	599	91.56	752
13	92.10	1095	90.80	430	90.06	181	90.04	186	89.97	213	90.72	306	92.68	1343	.....	1795	94.18	2276	92.89	1459	91.16	579	91.51	729
14	92.08	1060	90.71	350	90.06	181	90.01	186	89.97	214	90.81	322	92.66	1331	.....	1855	94.16	2262	92.77	1397	91.16	579	91.49	720
15	92.06	1005	90.65	290	90.06	181	90.06	186	89.97	216	90.89	342	92.60	1295	.....	1915	94.14	2248	92.72	1367	91.10	555	91.49	720
16	92.00	980	90.59	240	90.06	181	90.06	188	89.99	218	91.06	534	92.60	1295	.....	1980	94.11	2227	92.64	1319	91.08	547	91.51	729
17	91.98	962	90.55	224	90.06	181	90.06	190	89.99	220	91.14	571	92.62	1307	.....	2045	94.04	2178	92.62	1307	91.04	531	91.49	720
18	91.97	947	90.55	214	90.06	182	90.06	192	89.97	220	91.24	611	92.64	1319	.....	2110	93.94	2108	92.56	1271	91.12	563	91.47	711
19	91.91	932	90.44	203	90.06	182	90.06	193	89.97	221	91.35	657	92.62	1307	.....	2180	94.03	2171	92.49	1229	91.06	534	91.47	711
20	91.84	923	90.40	199	90.06	182	90.06	195	89.97	222	91.39	675	92.64	1319	.....	2250	94.14	2248	92.41	1185	91.06	534	91.45	702
21	91.81	911	90.38	197	90.06	182	90.06	195	89.97	223	91.43	693	92.74	1379	.....	2320	94.14	2248	92.39	1174	91.04	531	91.47	711
22	91.79	905	90.34	196	90.06	182	90.06	195	89.97	227	91.47	711	92.99	1519	.....	2390	94.18	2276	92.34	1143	90.97	503	91.39	675
23	91.74	900	90.31	194	90.06	182	90.06	195	89.97	228	91.47	711	93.16	1621	.....	2460	94.27	2339	92.29	1119	90.95	495	91.35	657
24	91.68	895	90.28	192	90.06	182	90.06	195	90.01	230	91.51	729	93.29	1699	.....	2530	94.31	2367	92.22	1081	90.95	495	91.31	639
25	91.66	888	90.27	190	90.06	182	90.06	195	90.01	232	91.62	779	93.27	1687	94.66	2615	94.31	2367	92.20	1070	91.14	571	91.35	657
26	91.64	882	90.23	190	90.04	180	90.06	194	89.97	233	91.66	797	93.29	1699	94.81	2727	94.30	2360	92.18	1059	91.18	587	91.35	657
27	91.60	878	90.20	189	90.04	180	90.04	195	89.97	234	91.77	850	93.31	1711	94.81	2727	94.23	2311	92.14	1037	91.29	631	91.31	639
28	91.59	873	90.18	187	90.04	180	90.04	196	90.01	237	91.89	910	93.37	1747	94.89	2787	94.18	2276	92.07	1000	91.31	639	91.35	657
29	91.56	863	90.18	186	90.04	180	.....	.....	90.01	238	91.99	960	93.41	1767	94.91	2802	94.14	2248	92.11	1020	91.39	675	91.37	666
30	91.54	854	90.16	185	90.01	180	.....	.....	90.01	239	91.99	960	93.43	1783	94.95	2832	94.01	2157	92.04	985	91.44	698	91.31	639
31	.....	.....	90.14	184	90.01	180	.....	.....	89.97	240	.....	.....	93.29	1699	.....	.....	93.89	2073	92.04	985	.....	.....	91.31	639

NOTE.—Relation of gauge height to discharge affected by ice from Nov. 4th, 1914, to April 15th, 1915; discharges computed from discharge measurements and climatologic records.

Monthly Discharge of Turtle River at Mountain Rapids for 1914-5

Drainage Area 1,760 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	1,355	854	1,032	.77	.49	.59	.66
December "	847	184	404	.48	.10	.23	.27
January .. (1915)	184	180	181	.10	.10	.10	.12
February	196	180	188	.11	.10	.11	.11
March.....	240	198	218	.14	.11	.12	.14
April	960	242	506	.55	.14	.29	.32
May.....	1,783	806	1,327	1.01	.46	.75	.86
June	2,832	1,411	2,041	1.61	.80	1.16	1.29
July.....	2,847	2,073	2,358	1.62	1.18	1.34	1.54
August	2,034	985	1,398	1.16	.56	.79	.91
September.....	995	495	658	.57	.28	.37	.41
October.....	761	639	699	.43	.36	.40	.46
The year	2,847	180	922	1.62	.10	.52	7.09

Wabigoon River near Quibell

Location—About 200 feet above the second fall from the G.T.P. Railway bridge, and ½ mile below the bridge which spans the first fall. One mile east from Quibell Station, Township of Wabigoon, District of Kenora.

Records Available—Discharge measurements from June, 1914, to October, 1915. Daily gauge heights from August 1, 1914, to October 31, 1915.

Drainage Area—2,400 square miles.

Gauge—Vertical staff with enamelled face screwed to a 5-inch hewn spruce post firmly wedged and braced to the rock on the right bank of the river 1,200 feet above the metering station. The zero on the gauge (elev. 1,061.64) is referred to a bench mark (elev. 1,069.46, G.T.P. datum) painted on a point of rock just below the gauge. The initial point for soundings is a spike driven in the rock on the left bank.

Channel and Control—1,200 feet above the station the channel takes a sharp bend to the right, thence running comparatively straight to the station and falls. The water is sluggish above and moderately swift at the station. The banks are high, rocky and wooded. The bed of the stream is full of boulders and crevices. One channel exists at all stages.

Discharge Measurements—Made from canoe and ice with a small Price current meter.

Regulation—The Dryden Timber and Power Company operate a plant on the Wabigoon River at Dryden, which runs 24 hours per day with the exception of Sundays and holidays.

Winter Flow—Ice formation is very heavy here, and the winter flow is somewhat disturbed by it.

Accuracy—Rating curve fairly well defined, and estimates for open water flow are good. Open water rating curve applied for winter discharges as there are not sufficient records available to compute the winter flow.

Observer—D. C. Warner, Quibell.

Discharge Measurements of Wabigoon River near Quibell, in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Feb. 9....	Binns, P. V....	79	524	1.17	1,062.78	615(a)	.....
Mar. 26....	"	79	562	1.10	1,062.60	616(b)	.....
June 5....	"	90	868	2.70	1,065.64	2347	.....
July 28....	"	84	694	1.54	1,063.66	1071	.....
Sept. 21....	"	80	628	1.18	1,062.91	741	.....
Sept. 21....	"	80	628	1.16	1,062.91	729	.....

(a) Ice on rocks at head of rapids. Ice measurement

(b) Ice measurement. Ice 2 feet thick in vicinity of gauge. Ice along shores and on rocks in rapids.

Daily Gauge Height and Discharge of Wabigoon River near Quibell for 1914-5

Drainage Area, 2,400 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1063.43	963	1063.15	837	.....	615	1062.96	755	1062.64	630	1062.60	615	1065.56	2300	1065.66	2375	1065.88	2540	1063.64	1065	1062.91	735	1063.97	1230
2	1063.43	963	1063.14	833	.....	615	1062.96	755	1062.72	660	1062.58	610	1065.23	2040	1065.73	2425	1065.89	2545	1063.56	1025	1062.91	735	1063.89	1190
3	1063.43	963	1063.13	828	.....	615	1062.96	755	1062.72	660	1062.60	615	1065.06	1915	1065.68	2390	1065.85	2515	1063.47	980	1062.89	725	1063.81	1150
4	1063.43	963	1063.12	824	.....	615	1062.96	755	1062.72	660	1062.62	620	1064.82	1750	1065.68	2390	1065.76	2450	1063.47	980	1062.87	720	1063.72	1105
5	1063.43	963	1063.07	801	.....	615	1062.96	755	1062.73	660	1062.65	635	1064.73	1690	1065.66	2375	1065.68	2390	1063.43	965	1062.85	710	1062.72	1105
6	1063.40	950	1062.97	758	.....	615	1062.96	755	1062.73	660	1062.76	675	1064.72	1685	1065.64	2360	1065.57	2305	1063.41	955	1062.81	695	1063.74	1115
7	1063.39	945	1062.96	754	.....	615	1062.93	740	1062.74	665	1063.14	835	1064.82	1750	1065.63	2350	1065.47	2230	1063.39	945	1062.79	685	1063.72	1105
8	1963.32	914	1062.93	742	.....	615	1062.89	725	1062.73	660	1063.60	1045	1065.43	2200	1065.60	2330	1065.31	2110	1063.35	925	1062.76	675	1063.72	1105
9	1063.22	869	1062.89	726	.....	615	1062.78	680	1062.73	660	1063.64	1065	1065.93	2580	1065.46	2225	1064.99	1870	1063.31	910	1062.76	675	1063.70	1095
10	1063.18	851	1062.89	726	.....	615	1062.81	695	1062.72	660	1063.91	1200	1066.18	2780	1065.06	1915	1064.74	1695	1063.28	895	1062.79	685	1063.72	1105
11	1063.14	833	1062.89	726	.....	615	1062.81	695	1062.76	675	1064.31	1425	1066.10	2715	1064.56	1580	1064.62	1620	1063.26	885	1062.76	675	1063.64	1065
12	1063.13	828	1062.89	726	.....	615	1062.80	690	1062.72	660	1064.22	1370	1065.98	2620	1064.40	1480	1064.47	1520	1063.26	885	1062.72	660	1063.56	1025
13	1063.14	833	1062.89	726	.....	615	1062.80	690	1062.72	660	1063.93	1210	1065.90	2555	1064.31	1425	1064.40	1480	1063.24	880	1062.64	630	1063.49	990
14	1063.14	833	1062.89	726	.....	615	1062.79	685	1062.72	660	1063.89	1190	1065.80	2480	1064.26	1395	1064.33	1440	1063.22	870	1062.64	630	1063.49	990
15	1563.14	833	.....	615	.....	615	1062.79	685	1062.72	660	1063.88	1185	1065.66	2375	1064.22	1370	1064.31	1425	1063.22	870	1062.72	660	1063.47	980
16	1063.14	833	.....	615	1062.97	760	1062.76	675	1062.72	660	1063.95	1225	1065.56	2300	1064.43	1500	1064.26	1395	1063.14	835	1062.74	665	1063.41	955
17	1063.21	864	.....	615	1062.97	760	1062.80	690	1062.72	660	1064.02	1260	1065.52	2270	1064.64	1630	1064.20	1360	1063.12	825	1062.72	660	1063.41	955
18	1063.18	851	.....	615	1062.96	755	1062.80	690	1062.68	645	1064.06	1285	1065.48	2240	1064.68	1655	1064.15	1330	1063.08	805	1062.74	665	1063.39	945
19	1063.14	833	.....	615	1062.96	755	1062.80	690	1062.64	630	1064.02	1260	1065.47	2230	1064.81	1740	1064.12	1315	1063.08	805	1062.74	665	1063.35	925
20	1063.14	833	.....	615	1062.97	760	1062.80	690	1062.64	630	1063.97	1235	1065.46	2225	1064.81	1740	1064.04	1270	1063.06	795	1062.76	675	1063.31	910
21	1063.13	828	.....	615	1062.97	760	1062.81	695	1062.64	630	1063.96	1230	1065.39	2170	1064.89	1800	1063.97	1230	1063.06	795	1062.95	750	1063.28	895
22	1063.10	815	.....	615	1062.97	760	1062.79	685	1062.64	630	1063.89	1190	1065.31	2110	1064.89	1800	1063.96	1230	1063.04	790	1063.08	805	1063.26	887
23	1063.06	797	.....	615	1062.96	755	1062.79	685	1062.65	635	1063.98	1240	1065.22	2035	1064.90	1805	1063.90	1195	1063.02	780	1063.28	895	1063.26	887
24	1063.06	797	.....	615	1062.97	760	1062.79	685	.....	635	1064.64	1630	1065.16	1990	1064.93	1825	1063.89	1190	1063.14	835	1063.33	920	1063.24	880
25	1063.05	792	.....	615	1062.97	760	1062.76	675	.....	635	1064.97	1855	1065.12	1965	1064.97	1855	1063.88	1185	1063.12	825	1063.49	990	1063.24	880
26	1063.05	792	.....	615	1062.97	760	1062.72	660	1062.65	635	1065.14	1980	1065.08	1930	1065.06	1915	1063.79	1140	1063.10	815	1063.85	1170	1063.24	880
27	1063.05	792	.....	615	1062.96	755	1062.72	660	.....	625	1065.62	2345	1065.06	1915	1065.10	1950	1063.72	1105	1063.06	795	1064.06	1285	1063.22	870
28	1063.04	778	.....	615	1062.96	755	1062.76	675	1062.62	620	1065.63	2350	1065.33	2125	1065.31	2110	1063.64	1065	1062.99	765	1064.08	1295	1063.24	880
29	1063.06	797	.....	615	1062.96	755	.....	...	1062.30	615	1065.65	2370	1065.52	2270	1065.56	2300	1063.66	1075	1062.99	765	1064.06	1285	1063.24	880
30	1063.04	778	.....	615	1062.96	755	.....	...	1062.62	620	1065.64	2360	1065.60	2330	1065.80	2480	1063.64	1065	1062.97	760	1064.04	1270	1064.28	895
31	.....	...	.....	615	1062.96	755	.....	...	1062.60	615	.....	....	1065.64	2360	.....	....	1063.64	1065	1062.91	835	.....	....	1063.28	895

NOTE.—Relation of gauge height to discharge affected by ice from Nov. 11th, 1914, to April 10th, 1915; discharges computed for that period may be as much as 20% too high.

Monthly Discharge of Wabigoon River near Quibell for 1914-5

Drainage Area, 2,400 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	963	778	856	.40	.32	.36	.40
December	837	615	683	.35	.26	.28	.32
January ..(1915)	760	615	689	.32	.26	.29	.33
February	755	660	702	.31	.27	.29	.30
March	675	615	646	.28	.26	.27	.31
April	2,370	610	1,304	.99	.25	.54	.60
May	2,780	1,685	2,190	1.16	.70	.91	1.05
June	2,480	1,370	1,950	1.03	.57	.81	.90
July	2,545	1,065	1,592	1.06	.44	.66	.76
August	1,065	735	863	.44	.31	.36	.42
September	1,295	630	810	.54	.26	.34	.38
October	1,230	870	996	.51	.36	.42	.48
The year	2,780	610	1,108	1.16	.25	.46	6.25

Wabigoon River at Wabigoon Falls

Location—About 100 feet above Wabigoon Falls, the last fall on the river, and three miles from its junction with the English River, District of Kenora.

Records Available—Discharge measurements from June, 1914, to October, 1915. Daily gauge heights August 1, 1914, to October 31, 1915, interpolated from gauge read on Wabigoon River at Quibell.

Drainage Area—3,120 square miles.

Gauge—Vertical staff with enamelled face screwed to a 5-inch hewn spruce post firmly wedged and braced to the left bank about 200 feet above the metering section. The zero on the gauge (elev. 111.37) is referred to a bench mark (elev. 120.07), consisting of a nail driven in the head of a 4-inch tamarac stump two feet up-stream from the gauge. Another bench mark (elev. 118.51) is painted on a point of rock on the left bank 75 feet below the metering section. The initial point for soundings is on the right bank, the edge of a 5-inch blazed poplar tree, and marked I. P., S. 12° E.

Channel and Control—Straight for about $\frac{1}{2}$ mile above and 100 feet below the station to the falls. Both banks are high, rocky and wooded, and will not overflow. The bed of the stream is composed of rock, with a few boulders and weeds at the right bank. The current is sluggish at and above the station, but swift just above the falls.

Discharge Measurements—Made from canoe and ice with a small Price current meter.

Regulation—The Dryden Timber & Power Company operate a plant at Dryden, Ontario. The power is used for the mill and for lighting the town. This plant runs 24 hours per day with the exception of Sundays and holidays, when it runs 12 hours. Part of the flow is utilized for operating a saw mill on the opposite side of the river.

Accuracy—The station rating curve is fairly well defined, but as the gauge heights are estimated from records at Quibell the discharges can only be considered approximate.

Discharge Measurements of Wabigoon River at Wabigoon Falls in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Feb. 5....	Binns, P. V	112	622	1.22	111.31	757(a)	.....
Mar. 13....	"	113	643	1.13	111.24	728(b)	.....
May 27....	"	246	3,437	0.70	113.95	2,421	.....
June 22....	Carmichael, R.M	245	3,339	0.67	113.54	2,235	.....
July 19....	"	244	3,290	0.60	113.37	1,980	.....
Sept. 11....	"	215	2,864	0.36	111.54	1,022	.....
Oct. 22....	"	237	3,026	0.39	112.29	1,168	.....

(a) Boat measurement 100 feet below regular section. Open water; ice at regular section too weak.

(b) On account of weak ice at regular section, measurement taken 300 feet below gauge at an open water section.

Daily Gauge Height and Discharge of Wabigoon River at Wabigoon Falls for 1914-5

Drainage Area, 3,120 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	112.46	1350	112.06	1085	.....	800	111.79	925	111.32	680	111.26	650	114.13	2625	114.17	2665	114.24	2725	112.72	1535	111.72	880	113.11	1805
2	112.46	1350	112.05	1080	.....	800	111.79	925	111.44	740	111.23	635	113.99	2500	114.19	2680	114.24	2725	112.63	1470	111.72	880	113.03	1750
3	112.46	1350	112.03	1070	.....	800	111.79	925	111.44	740	111.26	650	113.92	2445	114.18	2670	114.23	2715	112.51	1385	111.69	865	112.94	1690
4	112.46	1350	112.03	1070	.....	800	111.79	925	111.44	740	111.29	665	113.80	2350	114.18	2670	114.20	2690	112.51	1385	111.66	850	112.82	1605
5	112.46	1350	111 95	1020	.....	800	111.79	925	111.45	745	111.33	685	113.75	2310	114.17	2665	114.17	2665	112.46	1350	111.64	840	112.82	1605
6	112.42	1325	111.80	930	.....	800	111.79	925	111.45	745	111.50	770	113.74	2300	114.16	2655	114.13	2625	112.43	1330	111.58	810	112.85	1625
7	112.40	1310	111.79	925	.....	800	111.75	900	111.47	755	112.04	1075	113.80	2350	114.15	2645	114.09	2590	112.40	1310	111.54	790	112.82	1605
8	112.30	1240	111.75	900	.....	800	111.69	865	111.45	745	112.68	1505	114.08	2580	114.14	2635	114.03	2535	112.35	1275	111.50	770	112.82	1605
9	112.17	1150	111.69	865	.....	800	111.52	780	111.45	745	112.72	1535	114.25	2735	114.09	2590	113.89	2420	112.29	1235	111.50	770	112.80	1590
10	112.11	1115	111.69	865	.....	800	111.57	805	111.44	740	113.05	1765	114.34	2815	113.92	2445	113.75	2310	112.25	1205	111.54	790	112.82	1605
11	112.05	1080	111.69	865	.....	800	111.57	805	111.50	740	113.45	2070	114.30	2780	113.64	2220	113.68	2255	112.22	1185	111.50	770	112.73	1540
12	112.03	1070	111.69	865	.....	800	111.56	800	111.44	740	113.37	2005	114.27	2755	113.52	2125	113.57	2165	112.22	1185	111.44	740	112.63	1470
13	112.05	1080	111.69	865	.....	800	111.56	800	111.44	740	113.07	1780	114.24	2725	113.44	2060	113.52	2125	112.20	1170	111.32	680	112.54	1410
14	112.05	1080	111.69	865	.....	800	111.54	790	111.44	740	113.03	1750	114.21	2700	113.40	2030	113.46	2080	112.17	1150	111.32	680	112.54	1410
15	112.05	1080	.....	800	.....	800	111.54	790	111.44	740	113.01	1733	114.17	2665	113.37	2005	113.44	2060	112.17	1150	111.44	740	112.51	1385
16	112.05	1080	.....	800	111.80	930	111.50	770	111.44	740	113.09	1795	114.13	2625	113.55	2150	113.40	2030	112.04	1075	111.47	755	112.43	1330
17	112.12	1120	.....	800	111.80	930	111.56	800	111.44	740	113.17	1850	114.11	2610	113.69	2260	113.37	2005	112.02	1060	111.44	740	112.43	1330
18	112.11	1115	.....	800	111.78	925	111.56	800	111.38	710	113.21	1880	114.10	2600	113.72	2285	113.30	1950	111.96	1025	111.47	755	112.40	1310
19	112.05	1080	.....	800	111.79	925	111.56	800	111.32	680	113.17	1850	114.09	2590	113.79	2340	113.27	1925	111.96	1025	111.47	740	112.35	1275
20	112.05	1080	.....	800	111.80	930	111.56	800	111.32	680	113.11	1805	114.09	2590	113.79	2340	113.19	1865	111.93	1010	111.50	770	112.29	1235
21	112.03	1070	.....	800	111.80	930	111.57	805	111.32	680	113.10	1800	114.06	2565	113.83	2375	113.11	1805	111.93	1010	111.78	820	112.25	1205
22	111.99	1045	.....	800	111.79	925	111.54	790	111.32	680	113.03	1750	114.03	2535	113.83	2375	113.10	1800	111.90	990	111.96	1025	112.22	1185
23	111.93	1010	.....	800	111.79	925	111.54	790	111.33	685	113.12	1815	113.99	2500	113.84	2380	113.03	1750	111.86	965	112.25	1205	112.22	1185
24	111.93	1010	.....	800	111.80	930	111.54	790	.....	685	113.69	2260	113.96	2480	113.85	2390	113.02	1745	112.04	1075	112.32	1255	112.20	1170
25	111.92	1000	.....	800	111.80	930	111.50	770	.....	685	113.88	2390	113.95	2470	113.88	2415	113.01	1735	111.93	1010	112.54	1410	112.20	1170
26	111.92	1000	.....	800	111.80	930	111.43	735	111.33	685	113.96	2480	113.93	2455	113.92	2445	112.91	1665	111.99	1045	112.98	1715	112.20	1170
27	111.92	1000	.....	800	111.79	925	111.43	735	.....	625	114.15	2645	113.92	2445	113.94	2460	112.82	1605	111.93	1010	113.81	1880	112.17	1150
28	111.90	990	.....	800	111.79	925	111.50	770	111.29	665	114.16	2655	114.03	2535	114.03	2535	112.72	1535	111.83	950	113.83	1895	112.20	1170
29	111.93	1010	.....	800	111.79	925	.....	.....	111.26	650	114.17	2665	114.11	2610	114.13	2625	112.75	1555	111.83	950	113.21	1880	112.20	1170
30	111.90	990	.....	800	111.79	925	.....	.....	111.29	660	114.16	2655	114.14	2635	114.21	2700	112.72	1535	111.80	930	113.19	1860	112.25	1205
31	.....	.....	.....	800	111.79	925	.....	.....	111.26	650	.....	.....	114.16	2655	.....	....	112.72	1535	111.72	880	.....	....	112.25	1205

NOTE.—Gauge heights interpolated from those read at Quibell and discharges applied from Wabigoon Falls rating curve.

Monthly Discharge of Wabigoon River at Wabigoon Falls for 1914-5

Drainage Area, 3120 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	1,350	990	1,129	.56	.32	.36	.40
December "	1,085	800	867	.35	.26	.28	.32
January .. (1915)	930	800	866	.30	.26	.28	.32
February.....	927	735	823	.30	.24	.26	.27
March.....	755	650	709	.24	.21	.23	.27
April	2,665	635	1,719	.85	.20	.55	.61
May.....	2,815	2,310	2,565	.90	.74	.82	.95
June	2,700	2,030	2,428	.86	.66	.78	.87
July.....	2,725	1,535	2,088	.87	.49	.67	.77
August..... ...	1 535	880	1,139	.49	.28	.36	.42
September	1,895	680	1,019	.61	.22	.33	.37
October	1,805	1,150	1,392	.58	.37	.45	.52
The year	2,815	635	1,298	.90	.20	.45	6.09

Regular Stations

SOUTH-WESTERN ONTARIO DISTRICT

River	Location	Drainage Area Sq. Miles	Township	County or District
Beaver	near Feversham	37	Osprey	Grey Co
"	near Kimberley	100	Euphrasia	"
Bighead	at Meaford	132	St. Vincent	"
Black	near Washago	585	Rama	Ontario Co
Credit	at Cataract Jct	85	Caledon	Peel Co
Maitland	at Ben Miller	950	Colborne	Huron Co
Mill Creek	near Redwing	49	Collingwood	Grey Co
Nottawasaga	near Nicolston	416	Essa	Simcoe Co
Rocky Saugeen	near Markdale	96	Glenelg	Grey Co
Saugeen	near Port Elgin	1,565	Saugeen	Bruce Co
"	near Walkerton	895	Brant	"
Sydenham	near Owen Sound	71	Derby	Grey Co
Thames, main stream	near Byron	1,270	Delaware	Middlesex Co
" north branch	near Fanshaw	650	London	"
" south branch	near Ealing	515	London and Westminster	"

Beaver River near Feversham

Location—At the highway bridge about 2 miles below the Village of Feversham, Township of Osprey, County of Grey.

Records Available—Discharges from Mar. 1, 1914, to Aug. 31, 1915. Monthly discharge measurements from September, 1915.

Drainage Area—37 square miles.

Gauge—Vertical steel staff with enamelled face, graduated in feet and inches, located on upstream side of left abutment of bridge.

Discharge—Discharges up to Aug. 31st, 1915, were determined from flow over the weir located under the bridge. After that date the weir was removed and measurements made by wading with a Price current meter.

Accuracy—On account of leakage through large holes underneath the weir, records at this station cannot be considered better than fair.

Discharge Measurements of Beaver River near Feversham in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Sept. 16....	Roberts, E.	19	14	1.71	0.75	24	.....
Oct. 20....	"	20	13	1.79	0.75	23	.....

Daily Gauge Height and Discharge of Beaver River near Feversham for 1914-5

Drainage Area, 37 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1.00	12	1.31	35	1.07	16	1.04	14	1.25	30	1.22	27	1.41	44	1.19	25	1.07	16	1.00	12	.....	.....	.....	.....
2	.96	10	1.30	34	1.07	16	1.04	14	1.23	28	1.22	27	1.38	41	1.18	24	1.05	15	1.05	15	.....	.....	.....	.....
3	.96	10	1.23	28	1.05	15	1.08	17	1.19	25	1.21	26	1.39	42	1.18	24	1.05	15	1.07	16	.....	.....	.....	.....
4	.92	8	1.22	27	1.09	18	1.11	19	1.17	23	1.19	25	1.39	42	1.17	23	1.04	14	1.17	23	.....	.....	.....	.....
5	1.04	14	1.21	26	1.09	18	1.07	16	1.17	23	1.23	28	1.33	36	1.14	21	1.19	25	1.11	19	.....	.....	.....	.....
6	1.02	13	1.12	20	1.06	16	1.09	18	1.13	21	1.24	28	1.31	35	1.11	19	1.11	19	1.10	19	.....	.....	.....	.....
7	.91	7	1.10	18	1.12	20	1.04	14	1.14	21	1.30	34	1.31	35	1.14	21	1.07	16	1.11	19	.....	.....	.....	.....
8	.96	10	1.12	20	1.10	18	1.17	23	1.11	19	1.38	42	1.30	34	1.39	42	1.05	15	1.06	16	.....	.....	.....	.....
9	1.03	14	1.10	18	1.08	17	1.08	17	1.12	20	1.69	73	1.29	33	1.21	26	1.06	16	1.09	18	.....	.....	.....	.....
10	1.00	12	1.08	17	1.08	17	1.11	19	1.15	22	1.94	102	1.28	32	1.22	27	1.14	21	1.08	17	.....	.....	.....	.....
11	1.00	12	1.09	18	1.11	19	1.10	19	1.15	22	2.19	133	1.27	31	1.30	34	1.12	20	1.06	16	.....	.....	.....	.....
12	1.01	13	1.14	21	1.04	14	1.07	16	1.10	19	2.06	117	1.25	30	1.23	28	1.08	17	1.08	17	.....	.....	.....	.....
13	1.02	13	1.02	13	1.04	14	1.08	17	1.10	19	1.75	80	1.25	30	1.17	23	1.08	17	1.05	15	.....	.....	.....	.....
14	1.12	20	1.01	13	1.02	13	1.00	12	1.11	19	1.77	82	1.23	28	1.17	23	1.10	19	1.03	14	.....	.....	.....	.....
15	1.10	18	1.09	18	1.04	14	1.08	17	1.16	23	1.70	74	1.23	28	1.44	46	1.08	17	1.02	13	.....	.....	.....	.....
16	1.26	30	1.21	26	1.02	13	1.13	21	1.14	21	1.69	72	1.20	26	1.25	30	1.10	19	1.02	13	.....	.....	.....	.....
17	1.19	25	1.26	30	1.02	13	1.08	17	1.12	20	1.67	70	1.23	28	1.21	26	1.03	14	1.03	14	.....	.....	.....	.....
18	1.14	21	1.30	34	1.07	16	1.08	17	1.14	21	1.62	65	1.22	27	1.20	26	.96	10	1.01	13	.....	.....	.....	.....
19	1.14	21	1.23	28	1.10	19	1.12	20	1.12	20	1.62	65	1.21	26	1.16	23	1.02	13	1.01	13	.....	.....	.....	.....
20	1.05	10	1.10	18	1.08	17	1.04	14	1.14	21	1.58	60	1.20	26	1.15	22	.94	9	1.01	13	.....	.....	.....	.....
21	1.12	20	1.23	28	1.08	17	1.08	17	1.08	17	1.54	56	1.22	27	1.18	24	1.11	19	.99	11	.....	.....	.....	.....
22	1.10	18	1.19	25	1.08	17	1.06	16	1.08	17	1.52	54	1.23	28	1.16	23	1.02	13	.94	9	.....	.....	.....	.....
23	1.02	13	1.23	28	1.21	26	1.25	30	1.10	19	1.48	51	1.20	26	1.16	23	1.01	13	1.00	12	.....	.....	.....	.....
24	1.03	14	1.20	25	1.14	21	1.35	38	1.15	22	1.46	48	1.18	24	1.13	21	1.05	15	1.02	13	.....	.....	.....	.....
25	.95	9	1.21	26	1.07	16	1.27	31	1.21	26	1.46	48	1.19	25	1.10	19	1.01	13	1.02	13	.....	.....	.....	.....
26	.94	9	1.15	22	1.06	16	1.25	30	1.27	31	1.46	48	1.22	27	1.11	19	1.10	18	1.06	16	.....	.....	.....	.....
27	1.27	31	1.05	15	1.08	17	1.21	26	1.27	31	1.44	46	1.23	28	1.10	19	1.10	18	1.00	12	.....	.....	.....	.....
28	1.21	26	1.04	14	1.06	16	1.21	26	1.25	30	1.46	48	1.22	27	1.05	15	1.05	15	1.01	13	.....	.....	.....	.....
29	1.19	25	1.08	17	1.08	17	.....	.....	1.30	34	1.42	45	1.21	26	1.07	16	1.18	24	1.00	12	.....	.....	.....	.....
30	1.25	29	1.06	16	1.08	17	.....	.....	1.25	30	1.34	38	1.21	26	1.09	18	1.05	15	1.02	13	.....	.....	.....	.....
31	.....	.....	1.08	17	1.04	14	.....	.....	1.24	28	.....	.....	1.20	26	.....	.....	1.09	18	.96	10	.....	.....	.....	.....

Monthly Discharge of Beaver River near Feversham for 1914-5

Drainage Area 37 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	29	7	16	.78	.19	.43	.48
December "	35	13	22	.95	.35	.59	.68
January (1915)	26	13	17	.70	.35	.46	.53
February	38	14	20	1.03	.38	.54	.56
March	34	17	23	.92	.46	.62	.71
April	133	25	57	3.59	.68	1.54	1.72
May	44	24	30	1.19	.65	.81	.93
June	46	15	24	1.24	.41	.65	.73
July	25	9	16	.68	.24	.43	.50
August	23	9	14	.62	.24	.38	.44
The year	133	7	24	3.59	.19	.65	7.28

Beaver River near Kimberley

Location—At the bridge known as Hill's Bridge, about 2 miles above Kimberley, on the south half of lot 2, concession 5, Township of Euphrasia, County of Grey.

Records Available—Discharge measurements at Weber's Bridge September, 1914, to January, 1915. Discharge measurements and daily gauge heights April 25, 1915, to October 31, 1915, at Hill's Bridge.

Drainage Area—100 square miles.

Gauge—Vertical staff 0 to 6 feet on tree on left bank 20 feet downstream from bridge. Zero on gauge is 0.00.

Channel and Control—Channel straight above and below for a distance of 200 feet. The banks and control are permanent under ordinary conditions. The bed is composed of stones and gravel, one channel existing at all stages.

Discharge Measurements—Made from the bridge during the high-water period, and from a permanent wading section located 20 feet above the bridge for the low-water stages.

Regulation—The Hydro-Electric Power Commission's power plant located three-quarters of a mile upstream, though a twenty-four hour power, has a marked effect on the river stage at this section.

Accuracy—The rating curve is fairly well defined, but open-water estimates are subject to errors, due to fluctuations in stage caused by operation of power plant.

Observer—A. Hill, Kimberley P.O.

Discharge Measurements of Beaver River near Kimberley in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 27....	Murray, W. S. ..	35	32	1.54	4.50	49 (a)	.....
April 25....	Roberts, E	42	84	2.60	1.67	219	.....
May 19....	"	57	64	2.33	1.47	149	.....
" 19....	"	57	60	2.12	1.37	127	.....
June 7....	"	51	14	2.09	0.50	21	.....
" 23....	"	51	19	2.20	0.56	29	.....
July 11....	"	56	61	2.16	1.39	132	.....
" 21....	"	55	35	1.74	0.83	61	.....
Aug. 13....	"	55	33	2.03	0.81	67	.....
Sept. 16....	"	55	25	1.60	0.71	40	.....
Oct. 20....	"	56	36	1.76	0.89	63	.....

(a) Ice measurement at Weber's Bridge.

Daily Gauge Height and Discharge of Beaver River near Kimberley for 1914-5

Drainage Area, 100 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1											4.48	96	1.58	164	0.58	28	0.52	23	0.71	41	0.73	43	0.81	52
2											4.35	80	1.71	187	0.56	26	0.50	21	0.69	39	0.71	41	0.83	55
3											4.38	84	1.69	183	0.50	21	0.58	28	0.79	50	0.71	41	0.83	55
4											4.50	98	1.71	187	0.54	25	0.60	30	0.81	52	0.71	41	0.67	37
5											4.53	102	1.67	180	0.56	26	0.71	41	0.71	41	0.71	41	1.06	84
6											4.58	108	1.60	167	0.52	23	0.71	41	0.71	41	0.83	55	0.83	55
7											4.75	128	1.67	180	0.83	55	0.85	57	0.71	41	0.75	45	0.83	55
8											4.54	103	1.64	174	0.83	55	1.44	140	0.69	39	0.75	45	0.92	66
9											4.42	88	2.17	281	0.69	39	1.33	123	0.73	43	0.75	45	0.92	66
10											4.44	41	2.08	263	0.62	32	1.42	137	0.75	45	0.75	45	0.92	66
11											4.58	108	1.77	198	0.60	30	1.42	137	0.75	45	0.75	45	0.83	55
12											4.73	126	1.50	150	0.62	32	0.83	55	0.81	52	0.75	45	0.83	55
13											4.94	151	1.60	167	0.62	32	0.83	55	0.83	55	0.89	62	0.79	50
14											4.92	148	1.12	93	0.56	26	0.83	55	0.77	48	0.77	48	0.85	57
15											4.71	123	1.75	194	0.67	37	0.83	55	0.75	45	0.73	43	0.87	59
16											4.79	133	1.83	210	0.60	30	0.87	59	0.75	45	0.71	41	0.83	55
17											4.62	112	1.64	174	0.60	30	1.02	79	0.73	43	1.00	76	0.83	55
18											4.44	91	1.04	82	0.58	28	0.89	62	0.71	41	0.81	52	0.85	57
19											4.88	144	1.50	150	0.58	28	0.92	66	0.60	30	0.75	45	0.89	62
20											4.88	144	1.67	180	0.60	30	0.89	62	0.71	41	0.75	45	0.87	59
21											4.83	138	1.60	167	0.54	25	0.89	62	0.71	41	0.75	45	0.94	68
22											4.83	138	1.92	228	0.58	28	0.83	55	0.75	45	0.75	45	0.89	62
23											4.81	135	1.69	183	0.54	25	0.83	55	0.71	41	0.73	43	0.83	55
24											4.79	133	1.58	164	0.52	23	0.83	55	0.75	45	0.75	45	0.83	55
25											1.67	180	1.60	167	0.52	23	0.79	50	0.79	50	0.75	45	0.83	55
26											1.62	171	1.62	171	0.54	25	0.75	45	0.75	45	1.46	144	0.79	50
27											1.08	87	1.60	167	0.54	25	0.71	41	0.75	45	1.08	87	0.85	57
28											0.92	66	1.58	164	0.50	21	0.69	39	0.75	45	0.92	66	0.98	73
29											1.17	100	1.58	164	0.50	21	0.71	41	0.75	45	0.83	55	0.85	57
30											1.75	194	1.52	153	0.48	19	0.73	43	0.75	45	0.83	55	0.92	66
31													1.51	152			0.73	43	0.75	45			0.87	59

NOTE.—Gauge heights up to April 24th were read at Weber's Bridge.

Monthly Discharge of Beaver River near Kimberley for 1914-5

Drainage Area, 100 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile.			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)							
December							
January .. (1915)							
February							
March							
April	194	66	120	1.94	.66	1.20	1.34
May	281	82	176	2.81	.82	1.76	2.03
June	55	19	29	.55	.19	.29	.32
July	140	21	60	1.40	.21	.60	.69
August	55	30	44	.55	.30	.44	.51
September	144	41	52	1.44	.41	.52	.58
October	84	37	58	.84	.37	.58	.67
The period	281	19	77	2.81	.19	.77	6.14

Bighead River at Meaford

Location—At the Georgian Bay Milling & Power Co. grist mill bridge outside of the Town of Meaford, near lot 15, concession 5, Township of St. Vincent, County of Grey.

Records Available—June 10 to October 31, 1915.

Drainage Area—132 square miles.

Gauge—Vertical staff 0 to 12 feet on right abutment. Elevation of zero on gauge is 0.00.

Channel and Control—The channel is straight for 100 feet above and 500 feet below the gauging station. The bed of the stream is composed of stones and gravel, and is shifting. During the freshet stage banks and control are not stationary.

Discharge Measurements—During the low-water period a permanent wading section is used 200 feet downstream. The bridge is used during the high stages.

Regulation—Low-water flow is controlled by the Georgian Bay Milling & Power Co.'s dam located four miles upstream. As the plant is usually run for 24 hours each day, except Sunday, the fluctuations will not be great.

Accuracy—The rating curve is not very accurately defined below gauge height 1.80 feet; at all other stages for which gauge height records are available the discharges are considered good.

Observer—Wilbert Baker, Meaford.

Discharge Measurements of Bighead River at Meaford in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
June 10....	Roberts. E	31	33	1.93	2.00	63	.....
July 10....	"	29	27	1.40	1.81	38	.....
" 20....	"	31	32	1.82	1.86	58	.....
Aug. 11....	"	21	12	0.25	1.16	3 (a)	.....
Sept. 17....	"	31	27	1.48	1.83	40	.....
Oct. 20....	"	32	33	1.70	1.94	56	.....

(a) Dam above closed.

Daily Gauge Height and Discharge of Bighead River at Meaford for 1914-5

Discharge Area 132 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1																	1.83	41	1.83	41	1.87	45	1.96	57
2																	1.83	41	1.87	45	1.83	41	1.96	57
3																	1.83	41	1.96	57	1.85	43	1.92	56
4																	1.83	41	1.96	57	1.87	45	2.02	62
5																	1.83	41	2.00	63	1.83	41	2.37	131
6																	1.83	41	2.00	63	1.89	48	2.42	143
7																	1.83	41	2.00	63	1.89	48	2.21	99
8																	1.83	41	1.92	52	1.83	41	2.10	79
9																	1.83	41	1.92	52	1.83	41	2.08	76
10															2.00	63	1.83	41	1.92	52	1.85	43	2.08	76
11															2.04	69	1.83	41	1.54	17	1.83	41	2.17	92
12															2.00	63	1.75	32	1.94	55	1.83	41	2.14	86
13															2.00	63	1.83	41	2.12	83	1.96	57	2.08	76
14															2.00	63	1.92	52	2.21	99	2.00	63	2.10	79
15															1.96	57	1.92	52	1.87	45	1.87	45	2.00	63
16															2.08	76	1.92	52	1.92	52	1.83	41	2.00	63
17															2.08	76	1.92	52	1.89	48	1.79	35	2.00	63
18															2.08	76	2.00	63	1.83	41	1.83	41	2.12	83
19															2.12	83	1.92	52	1.83	41	1.79	36	2.19	95
20															2.17	92	1.83	41	1.83	41	1.85	43	2.12	83
21															2.04	69	1.83	41	1.89	48	1.92	52	1.94	55
22															1.92	52	1.83	41	1.83	41	1.89	48	1.92	52
23															1.92	52	1.92	52	1.87	45	1.96	57	1.98	60
24															1.83	41	1.92	52	1.87	45	2.04	69	2.02	66
25															1.83	41	1.83	41	1.89	48	1.92	52	2.00	63
26															1.87	45	1.83	41	1.94	55	1.77	34	2.02	66
27															1.83	41	1.83	41	1.92	52	2.71	201	2.00	63
28															1.83	41	1.92	52	1.92	52	2.33	125	2.10	79
29															1.83	41	1.83	41	1.83	41	2.33	123	2.12	83
30															1.83	41	1.83	41	1.92	52	2.14	86	2.04	69
31																	1.83	41	1.87	45			2.00	63

Monthly Discharge of Bighead River at Meaford for 1914-5

Drainage Area, 132 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)							
December. "							
January.. (1915)							
February							
March							
April							
May							
June 10–30	92	41	59	.70	.31	.45	.35
July	63	32	44	.48	.24	.33	.38
August	99	17	51	.75	.13	.39	.45
September	201	36	57	1.52	.27	.43	.48
October	143	52	75	1.08	.39	.57	.66
The period..	201	17	57	1.52	.13	.43	2.32

Black River near Washago

Location—At the highway bridge known as Kennedy's Bridge, about 5 miles southeast of the Town of Washago, on lot 1, concession G, Township of Rama, County of Ontario.

Records Available—Discharge measurements at first bridge from August, 1913, to January, 1914. Discharge measurements at Kennedy's Bridge from February, 1914, and daily gauge heights from May 5 to October 31, 1915.

Drainage Area—585 square miles.

Gauge—Vertical staff 0 to 12 feet on tree on left bank. Elevation of zero is 19.00, which is referred to a B.M. (elevation 30.00) on tie rod on downstream side of bridge.

Channel and Control—Channel is straight for 150 feet above and 700 feet below the gauging section. The banks and control can be considered permanent, as the velocity here is never very high. The bed of the stream is composed of rock.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—Owing to the somewhat sluggish flow at this section, ice from December to March forms to a great thickness, and relation of gauge height to discharge is seriously affected during that period. Measurements are made to determine the winter flow.

Regulation—The flow at this section during May, June and July is controlled to a large extent by logging dams above. The operation of gates at these dams causes fluctuations in gauge heights amounting to several feet at the gauge. At times logs lodge below section, causing considerable backwater.

Accuracy—For three months in the early summer the river stage is subject to large fluctuations, and the accuracy of the discharge depends upon accuracy of mean daily gauge heights. Rating curve not well defined at all stages.

Observer—John Carrick, Washago.

Discharge Measurements of Black River near Washago in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 5....	Murray, W. S. .	95	395	0.94	22.05	374 (a)	.....
Feb. 9...	" ..	105	530	0.72	22.50	381 (a)	.....
Mar. 9....	Roberts, E.	100	571	1.13	23.65	626 (a)	.....
June 12....	"	120	641	1.10	22.80	707 (b)	.....
July 9....	"	119	469	0.62	21.50	293	.....
Aug. 11....	"	99	426	0.40	21.08	172	.....
Sept. 18....	"	100	422	0.39	21.06	166	.....
Oct. 16....	"	119	551	0.88	22.21	482	.....

(a) Ice measurement.
(b) Cordwood in river.

Daily Gauge Height and Discharge of Black River near Washago, for 1914-5

Drainage Area 585 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22.40	560	21.54	285	20.58	48	20.94	135	21.71	333
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22.13	465	21.58	295	20.54	44	20.89	122	21.58	295
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22.04	434	21.65	315	20.52	42	20.81	102	21.75	345
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22.33	535	21.65	315	20.61	51	20.75	87	21.77	351
5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.50	1600	22.40	560	21.69	327	20.79	97	20.69	63	22.29	521
6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.56	1639	22.40	560	21.75	345	21.08	170	20.60	50	22.96	782
7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.52	1613	22.31	528	21.77	351	20.94	135	20.62	53	22.89	750
8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23.98	1289	22.79	706	21.65	315	20.92	130	20.71	77	22.73	682
9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23.83	1210	22.90	755	21.50	275	21.06	165	20.85	112	22.60	630
10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.08	1348	22.77	698	21.38	245	21.11	178	20.98	145	22.55	612
11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.08	1348	22.79	706	21.29	222	21.08	170	20.98	145	22.44	574
12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.50	1600	22.92	764	21.23	207	21.10	175	20.87	117	22.39	556
13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.67	1710	22.86	737	21.19	197	21.14	185	20.77	92	22.19	486
14	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24.19	1414	22.73	682	21.15	187	21.29	222	20.79	97	22.14	469
15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23.90	1245	22.75	682	21.08	170	21.33	232	20.85	112	22.23	500
16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23.80	1195	22.67	658	21.02	155	21.37	242	20.89	122	22.19	486
17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23.63	1110	22.61	634	20.94	135	21.31	228	20.89	122	22.12	462
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23.52	1055	22.46	581	20.86	115	21.04	160	21.04	160	22.12	462
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23.56	1075	22.33	535	20.81	102	20.96	140	21.10	175	22.14	469
20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23.27	930	22.36	546	20.77	92	20.89	122	21.04	160	22.23	500
21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23.02	809	22.27	514	20.79	97	20.81	102	20.98	145	22.19	486
22	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22.69	666	22.19	486	20.81	102	20.83	107	20.96	140	22.14	469
23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22.69	666	22.04	434	20.83	107	20.81	102	20.89	122	22.10	455
24	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22.75	690	21.94	402	20.86	115	20.87	117	20.85	112	22.00	420
25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22.92	764	21.90	390	20.86	115	20.96	140	20.83	107	21.92	396
26	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23.02	809	21.81	363	20.77	92	21.19	197	20.94	135	21.89	387
27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22.92	764	21.75	345	20.65	57	21.31	228	21.67	321	21.85	375
28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22.86	737	21.67	321	20.67	60	21.17	192	20.04	434	21.79	357
29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22.69	666	21.61	303	20.67	60	21.06	165	22.44	574	21.75	345
30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22.27	514	21.56	290	20.69	63	21.00	150	21.79	357	21.73	339
31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22.31	528	.....	.....	20.69	63	21.06	165	.....	.....	21.67	321

Monthly Discharge of Black River near Washago for 1914-5

Drainage Area, 585 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November. (1914)							
December "							
January .. (1915)							
February							
March							
April							
May 5–31	1,710	514	1,070	2.92	.88	1.83	1.84
June	764	290	539	1.31	.20	.92	1.03
July	351	57	180	.60	.10	.31	.36
August	242	42	148	.41	.07	.25	.29
September	574	50	156	.98	.09	.27	.30
October	782	295	471	1.34	.50	.81	.93
The period	1,710	42	414	2.92	.07	.71	4.75

Credit River at Cataract Junction

Location—About 500 feet opposite C.P.R. station at Cataract Junction, lot 14, concession 3, Township of Caledon, County of Peel.

Records Available—Discharge measurements from June, 1912. Daily gauge heights May 7 to October 31, 1915.

Drainage Area—85 square miles.

Gauge—Vertical staff 0 to 6 feet on tree located on right bank. Zero on gauge (elevation 8.00) is referred to a B.M. (elevation 10.00) painted on rock 100 feet downstream from metering section.

Channel and Control—The channel is straight for about 350 feet above and 300 feet below the section. The right bank is low, and overflows during high stages. The bed is composed of gravel, which is shifting during flood stages.

Discharge Measurements—Made at permanent wading section at all stages.

Winter Flow—The ice has but little effect at this section. The open channel curve can be used with a fair degree of accuracy.

Regulation—The dam at Erin, about four miles upstream, causes serious fluctuations in the river stage at this section. Semi-daily gauge readings will not give a representative mean.

Accuracy—A fairly well-defined rating curve has been established for this station. The accuracy of the records depends upon accuracy of the mean daily gauge heights.

Observer—Alfred Riches, Cataract Junction.

Discharge Measurements of Credit River at Cataract Junction in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 29....	Murray, W. S...	38	36	0.95	8.70	34 (a)	.....
Feb. 26....	Roberts, E.	50	62	1.58	9.23	99 (b)	.....
May 7....	"	40	29	2.05	8.79	60	.....
" 7....	"	40	27	1.59	8.72	43	.....
" 18....	"	40	29	1.97	8.75	57	.....
" 18....	"	40	28	1.94	8.74	54	.....
July 12....	"	40	21	1.28	8.60	27	.....
Aug. 11....	"	40	27	1.70	8.71	46	.....
" 27....	"	40	27	1.70	8.71	46	.....
" 27....	"	40	26	1.61	8.71	42	.....
Sept. 26....	"	41	38	2.52	8.96	96	.....
" 26....	"	41	38	2.39	8.96	91	.....
Oct. 13....	"	40	23	1.35	8.60	31	.....
" 13....	"	40	26	1.70	8.73	42	.....
" 13....	"	40	25	1.60	8.73	40	.....
" 13....	"	40	25	1.60	8.73	40	.....

(a) Ice measurement.
(b) Ice measurement at small foot bridge below regular section; ice jam above.

Daily Gauge Height and Discharge of Credit River at Cataract Junction for 1914-5

Drainage Area 85 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1															8.62	32	8.52	22	8.56	25	8.73	47	8.67	38
2															8.58	27	8.54	24	8.58	27	8.70	42	8.96	93
3															8.54	24	8.54	24	8.82	64	8.62	32	8.58	27
4															8.54	24	8.55	24	9.03	109	8.64	34	9.00	102
5															8.56	25	8.62	32	9.03	109	8.58	27	8.78	56
6															8.58	27	8.62	32	8.98	97	8.75	51	8.84	68
7													8.75	51	8.60	29	8.58	27	8.92	84	8.93	87	8.79	58
8													8.78	56	8.69	41	8.69	41	8.79	58	8.88	76	8.74	49
9													8.85	70	8.67	38	8.67	38	8.64	34	8.83	66	8.72	46
10													8.74	49	8.60	29	8.55	24	8.68	39	8.75	51	8.73	47
11													8.69	41	8.60	29	8.59	28	8.73	47	8.71	44	8.72	46
12													8.69	41	8.54	24	8.60	29	9.02	106	8.68	39	8.72	46
13													8.87	74	8.59	28	8.64	34	8.83	66	9.08	120	8.69	41
14													8.79	58	8.61	30	8.71	44	8.83	66	9.34	179	8.74	49
15													8.71	44	8.64	34	8.58	27	8.80	60	8.96	93	8.71	44
16													8.71	44	8.68	39	8.57	26	8.86	72	8.83	66	8.71	44
17													8.69	41	8.62	32	8.55	24	8.67	38	8.87	74	8.73	47
18													8.67	38	8.58	27	8.54	24	8.58	27	8.83	66	8.71	44
19													8.64	34	8.57	26	8.71	44	8.62	32	8.75	51	8.72	46
20													8.62	32	8.61	30	8.74	49	8.58	27	8.71	44	8.71	44
21													8.69	41	8.61	30	8.62	32	8.63	33	8.63	33	8.72	46
22													8.67	38	8.56	25	8.62	32	8.55	24	8.68	39	8.68	39
23													8.67	38	8.55	24	8.62	32	8.59	28	8.67	38	8.69	41
24													8.67	38	8.55	24	8.60	29	8.67	38	8.70	42	8.64	34
25													8.62	32	8.50	20	8.59	28	8.70	42	8.79	58	8.72	46
26													8.58	27	8.53	23	8.63	33	8.68	39	8.76	53	8.69	41
27													8.58	27	8.47	18	8.60	29	8.64	34	8.95	91	8.65	35
28													8.58	27	8.57	26	8.62	32	8.60	29	8.78	56	8.69	41
29													8.56	25	8.56	25	8.60	29	8.58	27	8.74	49	8.67	38
30													8.58	27	8.54	24	8.58	27	9.02	106	8.71	44	8.69	41
31													8.61	30			8.55	24	8.81	62			8.60	29

Monthly Discharge of Credit River at Cataract Junction for 1914-5

Drainage Area, 85 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	.....	.....	.....	.....	.....	.....	.....
December . "	.....	.....	.....	.....	.....	.....	.....
January .. (1915)	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May 7–31.....	74	25	41	.87	.29	.48	.45
June.....	41	18	28	.48	.21	.33	.37
July	49	32	30	.58	.26	.35	.40
August	109	24	53	1.28	.28	.62	.71
September	179	27	60	2.11	.32	.71	.79
October	102	29	47	1.20	.34	.55	.63
The period.....	179	18	43	2.11	.21	.51	3.65

Maitland River at Ben Miller

Location—At the highway bridge known as the Ben Miller Bridge, in the Village of Ben Miller, five miles south-west of the Town of Goderich, Township of Colborne, County of Huron.

Records Available—May, 1911, to October 31, 1915.

Drainage Area—950 square miles.

Gauge—Vertical steel staff gauge with enamelled face graduated in feet and inches and located on the downstream side of the first pier from the left abutment. The zero on the gauge (elev. 12.00) is referred to a bench mark (elev. 29.07) painted on the downstream side of the right wing wall.

Channel and Control—Channel is straight for 300 feet above and ¼ mile below the section. Both banks are low, clean and liable to overflow at high stages. The control is permanent during all stages, being composed of limestone.

Discharge Measurements—Made from the bridge at ordinary and high stages, and at a permanent wading section during the low water period.

Winter Flow—Ice greatly affects relation of gauge height to discharge. The section being wide and shallow, ice frequently freezes to the bottom, rendering meter measurements impossible.

Accuracy—For the low water a well-defined rating course has been established.

Observer—E. Pfrimmer, Ben Miller P.O.

Discharge Measurement of Maitland River at Ben Miller in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Feb. 5....	Murray, W. S...	360	877	2.24	14.79	1,969(a)	.....

(a) Ice measurement, slush on ice.

Daily Gauge Height and Discharge of Maitland River at Ben Miller for 1914-5

Drainage Area, 950 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	13.31	145	14.35	1330	14.34	985	14.63	1320	15.00	2875	14.21	1103	13.54	275	13.33	153	13.25	125	13.42	197	13.75	462	14.33	1292
2	13.31	145	14.48	1590	14.34	985	14.67	1400	14.67	2031	14.12	953	13.50	245	13.29	137	13.17	104	13.37	172	13.71	420	14.33	1292
3	13.38	175	14.44	1505	14.34	985	14.72	1495	14.42	1495	14.08	890	13.50	245	13.27	131	13.17	104	13.44	209	13.67	383	14.33	1292
4	13.42	195	14.33	1290	14.34	985	14.72	1495	14.33	1322	14.17	1035	13.52	260	13.33	153	13.25	125	13.58	305	13.62	383	14.33	1292
5	13.48	235	14.25	1155	14.34	985	14.79	1635	14.25	1175	14.27	1211	13.62	338	13.29	137	13.25	125	13.83	551	13.58	305	14.37	1398
6	13.50	245	14.17	1030	14.34	985	14.79	1635	14.25	1175	14.42	1495	13.62	338	13.25	125	13.25	125	13.87	599	13.50	245	14.46	1575
7	13.46	220	13.96	725	14.34	985	14.83	1940	14.17	1035	14.58	1827	13.67	383	13.33	153	13.25	125	13.87	599	13.50	245	14.50	1655
8	13.42	195	13.81	535	14.34	985	14.87	2030	14.08	890	14.79	2320	13.83	551	13.33	153	13.33	153	13.83	551	13.58	305	14.46	1575
9	13.42	195	13.83	560	14.37	1035	14.92	2150	14.08	890	14.92	2659	13.83	551	13.33	153	13.33	153	13.79	504	13.67	383	14.46	1575
10	13.46	220	13.92	665	14.63	1415	15.00	2345	14.00	770	15.17	3351	13.83	551	13.31	144	13.25	125	13.75	462	13.67	383	14.46	1575
11	13.46	220	14.00	780	14.80	1655	15.00	2345	14.08	890	15.33	3802	13.79	504	13.31	144	13.25	125	13.67	383	13.67	383	14.50	1655
12	13.42	195	13.83	560	14.80	1655	15.04	2450	14.08	890	15.38	3947	13.75	462	13.31	144	13.23	119	14.17	1035	13.87	599	14.33	1292
13	13.50	245	13.80	524	14.76	1575	15.25	3015	14.08	890	15.08	3099	13.67	383	13.31	144	13.23	119	14.33	1292	15.50	4505	14.12	953
14	13.62	345	13.78	500	14.76	1575	15.50	3715	14.23	1139	14.79	2320	13.60	320	13.31	144	13.23	119	14.50	1655	15.58	4553	14.08	890
15	13.58	314	13.78	500	14.72	1495	15.57	3920	14.54	1741	14.58	1827	13.56	290	13.37	172	13.23	119	14.50	1655	15.08	3099	14.17	1035
16	14.12	960	13.80	524	14.72	1495	15.50	3715	14.75	2222	14.38	1417	13.52	260	13.42	197	13.23	119	14.42	1495	14.67	2031	14.17	1035
17	14.17	1030	13.80	524	14.72	1495	15.50	3715	15.17	3351	14.21	1103	13.50	245	13.46	221	13.23	119	14.17	1035	14.67	2031	14.17	1035
18	13.92	670	13.84	570	14.72	1495	15.50	3715	15.00	2875	14.21	1103	13.50	245	13.46	221	13.23	119	14.08	890	14.58	1827	14.00	770
19	13.92	670	14.09	830	14.72	1495	15.50	3715	14.79	2320	14.12	953	13.48	233	13.46	221	13.33	153	14.04	830	14.42	1495	14.00	770
20	13.88	618	14.13	845	14.67	1210	15.50	3715	14.71	2125	14.08	890	13.46	321	13.42	197	13.25	125	13.77	483	14.33	1292	14.00	770
21	13.81	535	14.17	875	14.67	1210	15.50	3715	14.58	1827	13.92	662	13.50	245	13.42	197	13.25	125	13.71	420	14.25	1175	13.96	706
22	13.81	535	14.17	875	14.67	1210	15.42	3490	14.54	1741	13.83	551	13.50	245	13.33	153	13.25	125	13.71	420	14.17	1035	13.92	662
23	13.81	535	14.13	743	14.63	1140	16.00	5925	14.46	1575	13.79	504	13.48	233	13.33	153	13.21	113	13.67	383	14.08	890	13.92	662
24	13.83	560	14.13	743	14.63	1140	16.00	5925	14.42	1495	13.75	462	13.48	233	13.29	137	13.17	104	13.75	462	14.00	770	13.87	599
25	14.00	780	14.17	800	14.63	1140	16.00	5925	14.96	2767	13.71	420	13.44	209	13.21	113	13.17	104	14.00	770	14.00	770	13.83	551
26	14.15	995	14.22	875	14.63	1140	15.83	5364	14.88	2553	13.67	383	13.48	233	13.19	108	13.21	113	14.23	2039	14.92	2659	13.79	504
27	14.42	1465	14.22	875	14.63	1140	15.67	4839	14.79	2320	13.62	338	13.42	197	13.17	104	13.21	113	14.75	2222	14.75	2222	13.75	462
28	14.50	1530	14.22	875	14.59	1070	15.33	3802	14.61	2031	13.58	305	13.42	197	13.17	104	13.39	180	14.50	1655	14.78	2296	13.75	462
29	14.42	1465	14.30	1000	14.59	1070	.....	.....	14.54	1741	13.58	305	13.39	180	13.17	104	13.42	197	14.33	1292	14.50	1655	13.71	420
30	14.29	1220	14.30	1000	14.59	1070	.....	.....	14.38	1417	13.54	275	13.37	172	13.17	104	13.42	197	14.08	890	14.42	1495	13.71	420
31	.....	.....	14.30	1000	14.59	1070	.....	.....	14.25	1175	.....	.....	13.33	153	.....	.....	13.42	197	13.87	599	.....	....	13.71	420

NOTE.—Relation of gauge height to discharge affected by ice from Dec 18th, 1914, to Feb. 22nd, 1915; discharge for the period estimated from discharge measurements, observer's notes and climatologic records.

Monthly Discharge of Maitland River at Ben Miller for 1914-5

Drainage Area 950 Square Miles

Month	Discharge in Second-feet.			Discharge in Second-feet per Square Mile.			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	1,530	145	562	1.61	.15	5.92	.65
December. "	1,590	500	845	1.67	.53	.89	1.03
January ..(1915)	1,655	985	1,222	1.74	1.04	1.29	1.49
February	5,925	1,320	3,230	6.24	1.38	3.40	3.54
March	3,351	770	1,701	3.53	.81	1.79	2.06
April	3,947	275	1,384	4.15	.29	1.46	1.63
May	551	153	297	.58	.16	.31	.36
June.....	221	104	151	.23	.11	.16	.18
July	197	104	131	.21	.11	.14	.16
August	2,222	172	840	2.34	.18	.87	1.00
September	4,553	245	1,335	4.79	.26	1.41	1.57
October	1,655	420	987	1.74	.44	1.04	1.20
The year.....	5,925	104	1,041	6.24	.11	1.10	14.87

Mill Creek near Red Wing

Location—At the highway bridge near the Village of Red Wing near lot 16, concession 10, Township of Collingwood, County of Grey.

Records Available—July 20, 1915, to October 31, 1915, when station was discontinued.

Drainage Area—49 square miles.

Gauge—Vertical staff 0 to 3 feet on right abutment of bridge, upstream side. Zero on gauge is 0.00.

Channel and Control—The channel is straight for about 300 feet above and below the section. Both banks are high, and do not overflow. The bed is composed of gravel.

Discharge Measurements—Made from a wading section 100 feet above bridge.

Regulation—The dam at Red Wing has a 24-hour storage, and as the stream is small and the mill in use only a few hours each day serious fluctuations occur in the river stage at the section.

Accuracy—There are not sufficient records available to define the rating curve at all stages, and therefore discharges are approximate only.

Observer—Geo. White, Red Wing P.O.

Discharge Measurements of Mill Creek near Redwing in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
July 20....	Roberts, E.	30	9	.73	0.81	7	.....
Aug. 13....	"	31	12	1.75	1.06	21	.....
Sept. 16....	"	32	13	1.30	1.00	17	.....

Daily Gauge Height and Discharge of Mill Creek near Redwing for 1914-5

Drainage Area, 49 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1																			0.85	9	0.85	9	1.29	35
2																			0.87	10	0.79	6	1.29	35
3																			1.17	27	0.77	5	1.31	37
4																			1.27	34	0.81	7	1.31	37
5																			1.17	27	0.81	7	1.31	37
6																			0.94	14	0.94	14	1.29	35
7																			0.94	14	1.10	23	1.29	35
8																			0.85	9	1.14	25	1.31	37
9																			0.81	7	1.14	25	1.31	37
10																			0.85	9	1.10	26	1.25	32
11																			0.85	9	1.02	18	1.23	31
12																			0.89	11	1.02	18	1.14	25
13																			0.89	11	1.06	21	1.27	34
14																			0.85	9	1.08	22	1.27	34
15																			0.85	9	0.98	16	1.23	31
16																			0.89	11	1.10	23	1.21	30
17																			0.85	9	1.64	60	1.21	30
18																			0.85	9	1.60	57	1.21	30
19																			0.79	6	1.31	37	1.19	28
20																	0.85	8	0.77	5	1.23	31	1.17	27
21																	0.89	11	0.69	2	1.14	25	1.23	31
22																	0.85	9	0.77	5	1.10	23	1.25	32
23																	0.89	11	0.81	7	1.10	23	1.27	34
24																	0.85	9	0.89	11	1.10	23	1.31	37
25																	0.85	9	0.94	14	1.12	24	1.35	39
26																	0.92	13	0.85	9	1.35	39	1.39	42
27																	0.89	11	0.85	9	1.31	37	1.39	42
28																	0.81	7	0.85	9	1.27	34	1.35	39
29																	0.89	11	0.85	9	1.25	32	1.35	39
30																	0.81	7	0.89	11	1.25	32	1.33	38
31																	0.85	9	0.85	9			1.33	38

Monthly Discharge of Mill Creek near Redwing for 1914-5

Drainage Area, 49 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....
January .. (1915)	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March.....	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June	.....	.....	.....	.....	.....	.....	.....
July 20–31.....	13	7	10	.27	.14	.20	.08
August	34	2	11	.71	.05	.22	.25
September.....	60	5	25	1.22	.10	.51	.57
October	42	25	34	.86	.51	.69	.80
The period.....	60	2	22	1.22	.05	.45	1.70

Nottawasaga River near Nicolston

Location—At McLean's bridge, 4 miles north of the Town of Nicholston, near lot 5, concession 6, Township of Essa, County of Simcoe.

Records Available—Discharge measurements from June, 1912. Daily gauge heights August 18, 1914, to October 31, 1915.

Drainage Area—416 square miles.

Gauge—Vertical staff 0 to 12 feet on right abutment, upstream side. Zero on the gauge (elevation 4.00) is referred to B.M. (elevation 20.00) on tension rod of bridge 60 feet from initial point for soundings.

Channel and Control—The channel below the section is straight for about 600 feet. Above the section it is straight for about 100 feet, when it takes a sharp turn to the right, causing a severe angle at the bridge. Both banks and control are subject to change under high-water conditions.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—The relation of gauge height to discharge is affected by ice during the winter months, and measurements are made to compute the winter flow.

Regulation—The dams above have no effect on this section.

Accuracy—These records, with the reduction made for the angle at section, can be considered good up to discharges of 800 second feet. There are not sufficient records available to compute discharges very accurately above gauge height 8.00 feet. The estimate made is probably close to the actual discharge.

Observer—John Scott, Egbert P.O.

Discharge Measurements of Nottawasaga River near Nicolston in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 20....	Murray, W. S...	85	238	0.92	6.29	219 (a)	.....
Feb. 19....	"	80	295	1.03	7.17	305 (a)	.....
Mar. 18....	"	90	533	1.26	8.96	670 (a)	.....
April 26....	Roberts, E....	90	462	1.26	7.71	584	.....
May 20....	"	85	300	0.60	5.81	179	.....
June 6....	"	80	254	0.50	5.30	126	.....
July 17....	"	70	272	0.59	5.80	163	.....
Aug. 25....	"	90	272	0.49	5.80	132	.....
" 26....	"	90	272	0.51	5.79	139	.....
Sept. 5....	"	90	244	0.39	5.48	96	.....
" 5....	"	90	244	0.41	5.49	98	.....
Oct. 7....	"	90	327	0.76	6.39	249	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of Nottawasaga River near Nicolston for 1914-5

Drainage Area, 416 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	5.92	174	6.63	316	5.84	138	6.38	206	8.59	632	8.29	717	6.48	286	5.48	97	5.25	65	5.46	94	5.85	160	5.87	164
2	6.05	200	6.98	386	6.09	196	6.25	180	8.46	600	8.13	669	6.54	298	5.50	100	5.42	88	5.56	109	5.62	118	7.21	437
3	6.00	190	7.13	417	5.92	160	6.48	206	8.34	570	7.71	562	6.36	262	5.48	97	5.79	148	6.06	202	5.60	115	8.06	650
4	5.98	186	6.88	366	6.17	204	6.50	210	8.09	507	7.79	582	6.17	224	5.31	71	5.65	122	8.98	924	5.56	109	7.21	437
5	6.09	208	6.46	270	6.19	208	6.38	186	7.75	422	8.50	780	6.11	212	5.42	88	5.75	140	8.92	906	5.48	97	6.94	380
6	6.05	200	6.13	216	5.92	154	6.38	186	7.64	308	8.59	807	6.13	216	5.31	71	6.00	190	7.52	515	5.54	106	6.48	286
7	6.09	208	6.09	208	6.00	170	6.46	202	7.54	378	8.71	843	6.02	194	5.33	74	5.77	144	7.08	406	6.10	210	6.39	268
8	6.00	190	5.86	162	6.29	218	6.75	260	7.46	362	9.42	1062	6.56	302	5.60	115	5.81	152	6.98	390	6.35	260	6.33	256
9	6.13	216	6.21	222	6.17	194	6.54	218	7.04	278	9.71	1163	6.98	390	5.83	156	5.96	182	6.73	336	6.17	224	6.17	224
10	5.94	178	6.09	198	6.13	186	6.38	166	7.34	338	9.79	1194	7.02	394	5.75	140	5.79	148	6.48	286	5.89	168	6.10	210
11	6.09	208	5.98	176	6.09	178	6.79	248	7.34	338	10.25	1352	6.73	336	5.62	118	5.54	106	6.17	224	5.79	148	6.10	210
12	6.05	200	6.05	190	6.23	206	6.63	216	7.17	304	10.09	1295	6.34	258	5.46	94	5.50	100	6.08	206	5.69	128	5.87	164
13	6.40	270	5.82	144	6.31	222	6.63	216	7.09	288	10.05	1282	6.63	316	5.46	94	5.83	156	6.98	390	6.89	368	5.92	174
14	6.88	366	6.05	190	6.29	218	6.59	208	7.25	320	9.05	945	6.59	308	5.71	132	6.29	248	6.98	390	8.02	640	6.00	190
15	6.50	270	5.92	164	6.13	186	6.96	282	7.67	404	7.84	595	6.19	228	5.83	156	5.98	186	6.71	332	7.12	415	6.37	264
16	7.23	442	6.03	186	6.09	178	6.84	258	7.17	304	7.50	510	5.90	170	6.33	256	5.75	140	6.27	244	6.33	256	6.39	268
17	7.50	510	5.84	148	6.09	178	7.09	308	8.75	675	7.59	532	6.04	198	5.89	168	6.29	248	6.04	198	6.42	274	6.17	224
18	6.46	282	5.88	156	6.25	200	6.88	266	9.00	750	7.09	408	6.17	224	5.73	136	6.12	214	5.96	182	6.98	390	6.14	218
19	6.67	324	6.00	180	6.44	238	6.71	212	8.79	687	6.92	375	5.96	182	5.64	121	5.98	186	5.69	128	6.73	336	6.21	232
20	6.09	208	5.63	112	6.25	200	6.96	262	9.05	795	6.84	358	5.75	140	5.60	115	6.37	264	5.79	148	6.27	244	6.23	236
21	5.84	158	6.00	180	6.67	284	6.71	212	9.50	960	6.79	348	5.81	152	5.60	115	6.08	206	5.73	136	6.06	202	6.19	228
22	5.92	174	5.84	148	6.09	168	7.00	270	9.92	1132	6.84	358	6.08	206	5.56	109	6.02	194	5.69	128	5.94	178	6.10	210
23	6.34	258	6.09	198	6.00	150	6.96	262	10.50	1370	6.29	248	5.92	174	5.50	100	6.04	198	5.94	178	5.85	160	6.04	198
24	6.09	208	5.88	156	6.21	192	7.50	370	11.46	1804	6.29	241	5.86	162	5.50	100	5.46	94	5.81	152	5.81	152	5.87	164
25	6.05	200	5.75	122	6.52	234	9.00	750	12.85	2360	6.21	232	5.81	152	5.50	100	5.33	74	5.85	160	5.69	128	5.94	178
26	6.38	266	6.34	238	6.46	222	8.79	687	12.46	2204	8.00	635	5.86	162	4.35	77	5.75	140	5.81	152	5.79	148	5.94	178
27	6.61	312	5.84	138	6.46	222	8.84	702	11.25	1720	6.80	350	5.75	140	5.29	69	5.75	140	5.69	128	6.94	380	5.96	182
28	7.09	408	5.96	162	6.40	210	8.71	663	10.25	1352	6.73	336	5.77	144	5.35	77	5.71	132	5.69	128	7.02	394	5.94	178
29	6.17	224	6.21	212	6.40	210	.....	.....	9.00	930	6.65	320	5.71	132	5.39	83	5.79	148	5.60	115	6.62	314	5.87	164
30	6.67	324	6.09	190	6.13	156	.....	.....	8.50	780	6.34	258	5.56	109	5.31	71	5.73	136	5.77	144	6.02	194	6.06	202
31	.....	.....	6.09	190	6.25	180	.....	.....	8.29	717	.....	.....	5.60	115	.....	.....	5.54	106	5.98	186	.....	.....	5.81	152

NOTE.—Relation of gauge height to discharge affected by ice from Dec. 9th, 1914, to March 23rd, 1915; discharges for the period computed from climatologic records, discharge measurements and observer's notes.

Monthly Discharge of Nottawasaga River near Nicolston for 1914-5

Drainage Area 416 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	510	158	252	1.23	.38	.61	.68
December "	417	112	205	1.00	.27	.49	.56
January. (1915)	284	138	195	.68	.33	.47	.54
February	750	166	300	1.80	.40	.72	.75
March	2,360	278	793	5.67	.67	1.91	2.20
April	1,352	232	645	3.25	.56	1.55	1.73
May	394	109	219	.95	.27	.53	.61
June	256	69	110	.62	.17	.26	.29
July	264	65	155	.63	.15	.37	.43
August	924	94	265	2.22	.23	.64	.74
September	640	97	234	1.54	.23	.56	.62
October	650	152	243	1.56	.37	.58	.67
The year	2,360	65	301	5.67	.16	.72	9.82

Rocky Saugeen River near Markdale

Location—At the highway bridge known as Glen-Cross Bridge, three-quarters of a mile above Hayward's Falls, near lot 5, concession 8, Township of Glenelg, County of Grey.

Records Available—Discharge measurements and daily gauge heights June 8 to October 31, 1915.

Drainage Area—96 square miles.

Gauge—Vertical staff 0 to 6 feet on the downstream side of the centre pier of bridge. The zero of gauge (elevation 0.00) is referred to a B.M. (elevation 29.65) painted on a rock projecting from bank 40 feet north from first telephone pole on left bank.

Channel and Control—The channel is straight for 200 feet above and 500 feet below the station. The bed and banks are permanent, as flood conditions do not exist on this stream.

Discharge Measurements—Made at a permanent wading section. When the river is extremely high measurements will be made from the bridge.

Winter Flow—Ice is not expected to have a serious effect at this section.

Regulation—The dam above has no effect on the river stage at this section.

Accuracy—The rating curve is well defined between the stages for which gauge height records are available.

Observer—Arthur McNally, Markdale.

Discharge Measurements of Rocky Saugeen River near Markdale in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
June 8....	Roberts, E.	39	40	2.38	1.44	95 (a)	.....
July 11....	"	65	72	0.73	1.23	55 (b)	.....
Aug. 12....	"	70	80	1.00	1.38	81 (c)	.....
Sept. 17....	"	77	105	1.12	1.76	118	.....
Oct. 20....	"	75	76	0.87	1.36	66	.....

(a) Bridge section.
(b) Bridge 20 ft. below section under repair; debris at gauge.
(c) Measurement taken near present wading section.

Daily Gauge Height and Discharge of Rocky Saugeen River near Markdale for 1914-5

Drainage Area, 96 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1																	1.42	74	1.17	47	1.25	55	1.50	84
2																	1.25	55	1.17	47	1.25	55	1.50	84
3																	1.42	74	1.25	55	1.25	55	1.42	74
4																	1.33	64	1.50	84	1.35	55	1.42	74
5																	1.25	55	1.33	64	1.25	55	1.50	84
6																	1.25	55	1.33	64	1.25	55	1.58	94
7																	1.33	64	1.25	55	1.25	55	1.58	94
8															1.42	74	1.33	64	1.25	55	1.33	64	1.58	94
9															1.42	74	1.25	55	1.25	55	1.25	55	1.50	84
10															1.42	74	1.33	64	1.25	55	1.25	55	1.58	94
11															1.42	74	1.25	55	1.17	47	1.25	55	1.50	84
12															1.42	74	1.25	55	1.42	74	1.33	64	1.50	84
13															1.33	64	1.33	64	1.42	74	1.42	74	1.50	84
14															1.33	64	1.33	64	1.33	64	1.33	64	1.58	94
15															1.50	84	1.25	55	1.33	64	1.33	64	1.50	84
16															1.50	84	1.33	64	1.33	64	1.33	64	1.50	84
17															1.50	84	1.50	84	1.25	55	1.42	74	1.33	64
18															1.50	84	1.42	74	1.25	55	1.50	84	1.33	64
19															1.42	74	1.42	74	1.25	55	1.42	74	1.42	74
20															1.42	74	1.33	64	1.25	55	1.42	74	1.42	74
21															1.42	74	1.25	55	1.25	55	1.42	74	1.33	74
22															1.50	84	1.25	55	1.25	55	1.33	64	1.25	55
23															1.42	74	1.25	55	1.25	55	1.33	64	1.25	55
24															1.33	64	1.25	55	1.25	55	1.42	74	1.25	55
25															1.33	64	1.25	55	1.25	55	1.42	74	1.25	55
26															1.33	64	1.25	55	1.25	55	1.50	84	1.25	55
27															1.42	74	1.25	55	1.25	55	1.67	105	1.25	55
28															1.33	64	1.25	55	1.17	47	1.67	105	1.25	55
29															1.25	55	1.25	55	1.25	55	1.58	94	1.25	55
30															1.33	64	1.25	55	1.25	55	1.58	94	1.25	55
31																	1.25	55	1.25	55			1.25	55

Monthly Discharge of Rocky Saugeen River near Markdale for 1914-5

Drainage Area, 96 Square Miles

Month.	Discharge in Second-feet.			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914).							
December							
January (1915).							
February							
March							
April							
May							
June 8–30	84	55	72	.87	.57	.75	.64
July	84	55	61	.87	.57	.64	.74
August	84	47	58	.87	.49	.60	.69
September	105	55	69	1.09	.57	.72	.80
October	94	55	73	.98	.57	.76	.88
The period	105	47	66	1.09	.49	.69	3.75

Saugeen River near Port Elgin

Location—At the highway bridge known as McCalder's Bridge, 4 miles north-east of the Town of Port Elgin, near lot 5, concession 12, Township of Saugeen, County of Bruce.

Records Available—Discharge measurements from July, 1911. Daily gauge heights April 19, 1914, to October 31, 1915.

Drainage Area—1,565 square miles.

Gauge—Vertical staff 0 to 12 feet on right abutment downstream side. Zero on gauge (elevation 4.00) is referred to a B.M. (elevation 25.00) painted on wooden hand-rail of bridge.

Channel and Control—The channel is straight for about 350 feet above and below the section. The bed of the stream, with two submerged piers existing at the section, is composed of fairly large boulders, which will only shift during high flood stages. The current is moderate and flows through two channels, which are separated by the centre pier of the bridge.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—Ice greatly affects relation of gauge height to discharge. Measurements are made during the winter to determine the approximate flow.

Regulation—Fluctuations have been noted in the river stage at this section. This is no doubt caused by the plants at Walkerton, Chesley and Paisley.

Accuracy—Semi-daily readings should give a fair representative mean. The fluctuations that have been noted are not large, consequently the gauge height records can be classified as good. A well-defined curve is shown for flows up to 2,000 sec. feet. A slight angle in cross-section No. 1 may affect accuracy of meter measurements.

Observer—John Shanks, Southampton.

Discharge measurements of Saugeen River near Pt. Elgin in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Feb. 1....	Murray, W.S....	194	633	0.57	5.84	362 (a)	.....
Mar. 3....	"	197	1,109	2.07	7.08	2,305 (b)	....
Apr. 23....	Roberts, E.....	197	955	1.63	6.29	1,556	... .
May 23....	"	192	759	0.95	5.33	729	... .
June 16....	"	192	755	0.87	5.25	659	.....
July 18....	"	190	690	0.75	4.92	518	.....
" 18....	"	190	672	0.67	4.85	452	.....
Aug. 6....	"	192	822	1.11	5.60	914	.....
" 26....	"	192	793	1.03	5.48	818	....
Sept. 15....	"	197	969	1.59	6.35	1,543	... .
Oct. 19....	"	191	889	1.33	5.94	1,187	....

(a) Ice measurement.
(b) Measurement made 15 feet below gauge, slush ice and frost interfering.

Daily Gauge Height and Discharge of Saugeen River near Port Elgin for 1914-5

Drainage Area 1,565 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	4.75	520	6.44	1890	5.75	724	5.88	860	8.42	3842	6.83	2093	5.92	1153	5.10	590	4.71	418	4.67	404	4.98	530	6.58	1818
2	4.83	575	6.42	1860	5.71	700	6.17	965	7.67	3017	6.83	2093	5.83	1072	5.00	540	4.73	425	4.62	387	4.94	510	6.27	1480
3	4.83	575	6.29	1750	5.75	689	6.08	1135	7.08	2368	6.71	1961	5.83	1072	4.93	505	4.94	510	4.69	411	4.87	478	6.17	1381
4	4.96	650	6.19	1650	5.75	712	6.12	1333	7.17	2467	6.58	1818	5.75	1005	4.87	478	4.75	432	5.42	773	4.83	462	6.14	1353
5	4.96	650	6.00	1480	5.75	773	6.21	1420	7.42	2742	6.88	2148	5.71	973	4.92	500	4.73	425	5.48	812	4.75	432	6.37	1567
6	4.92	640	5.94	1430	5.83	860	6.25	1460	7.12	2412	7.17	2467	5.67	944	4.79	446	4.92	500	5.62	909	4.81	454	6.83	2093
7	4.92	640	5.88	1380	5.90	923	6.37	1587	6.79	2049	7.66	3006	5.62	909	4.85	470	4.93	505	5.62	909	4.71	418	7.19	2489
8	4.92	640	5.83	1330	6.17	965	6.50	1730	6.67	1917	8.00	3380	5.67	944	5.12	601	4.94	510	5.58	881	4.75	432	7.12	2412
9	4.96	650	5.77	1280	6.33	1045	6.67	1917	6.67	1917	8.40	3820	5.73	989	5.17	628	4.94	510	5.39	754	5.37	742	6.83	2093
10	4.92	640	5.67	1220	6.42	1153	6.62	1862	6.58	1818	9.00	4480	5.79	1037	5.21	650	4.83	462	5.31	706	5.21	650	6.73	1983
11	4.88	610	5.62	1170	6.46	1252	6.64	1884	6.54	1774	9.75	5305	5.75	1005	5.21	650	4.81	454	5.23	661	5.10	590	6.48	1653
12	4.92	640	5.46	1050	6.54	1315	6.88	2148	6.83	2093	10.33	5943	5.67	944	5.21	650	4.85	470	5.48	812	5.04	560	6.29	1500
13	5.00	690	5.35	960	6.46	1351	7.08	2368	6.67	1917	10.00	5580	5.58	881	5.21	650	4.92	500	5.79	1037	5.25	672	6.21	1420
14	5.21	855	5.21	850	6.50	1470	7.25	2555	7.08	2368	9.38	4890	5.50	825	5.06	570	4.92	500	5.71	973	6.12	1333	6.04	1261
15	5.58	1130	5.00	690	6.42	1430	8.42	3842	7.85	3215	8.17	3567	5.42	773	5.10	590	4.85	470	5.57	874	6.33	1543	5.89	1135
16	5.92	1420	4.88	610	6.40	1460	8.50	3930	8.17	3567	7.75	3105	5.37	742	5.14	612	4.93	505	5.46	799	6.37	1587	6.00	1225
17	6.17	1690	4.83	575	6.40	1490	8.92	4392	7.75	3105	7.25	2555	5.33	718	5.62	909	5.12	601	5.37	742	6.41	1631	5.89	1126
18	6.00	1480	4.71	500	6.58	1520	8.25	3655	7.58	2918	7.04	2324	5.37	742	5.67	944	5.84	1081	5.29	694	6.56	1796	5.87	1108
19	5.79	1300	4.69	480	6.92	1560	8.00	3380	7.58	2918	6.83	2093	5.37	742	5.60	895	5.87	1108	5.19	639	6.42	1642	5.87	1108
20	5.58	1180	4.68	460	6.92	1620	8.17	3567	7.27	2577	6.67	1917	5.12	601	5.58	881	5.02	550	5.04	560	6.21	1420	5.81	1054
21	5.83	1370	4.68	460	6.88	1620	8.42	3842	7.50	2830	6.50	1730	5.25	672	5.35	730	5.00	540	5.12	601	6.14	1351	5.81	1054
22	5.62	1170	4.71	480	6.75	1510	7.33	2643	7.54	2874	6.38	1598	5.29	694	5.31	706	4.92	500	5.75	1005	5.96	1119	5.79	1037
23	5.08	750	4.79	490	6.67	1410	7.71	3061	7.58	2918	6.29	1500	5.33	718	5.17	628	4.83	462	5.29	694	5.71	973	5.73	989
24	5.21	850	4.88	510	6.54	1315	10.50	6130	7.92	3292	6.10	1315	5.17	628	5.10	590	4.77	439	5.23	661	5.62	909	5.56	867
25	6.00	1480	5.00	520	6.39	1270	10.33	5943	8.17	3567	6.04	1261	5.25	672	5.00	540	4.79	446	5.33	718	5.46	799	5.54	853
26	6.92	2400	5.21	630	6.50	1315	9.42	4942	8.00	3380	6.00	1225	5.25	672	4.94	510	4.79	446	5.50	825	5.87	1108	5.50	825
27	7.44	2990	5.60	800	6.37	1297	8.71	4161	7.75	3105	5.96	1119	5.21	650	4.87	478	4.79	446	5.52	839	6.92	2192	5.44	786
28	7.12	2620	5.58	1000	6.33	1153	8.75	4205	7.50	2830	5.92	1153	5.12	601	4.75	432	4.83	462	5.37	742	7.46	2726	5.37	742
29	6.67	2120	5.54	1000	6.25	1005	.....	.....	7.25	2550	5.96	1119	5.17	628	4.77	439	4.76	435	5.21	650	7.42	2742	5.35	730
30	6.62	2070	5.56	1000	6.17	895	.....	.....	7.00	2280	5.92	1153	5.21	650	4.77	439	4.75	432	5.12	601	6.87	2137	5.33	718
31	.....	.....	5.60	980	6.08	860	.....	.....	7.00	2280	.....	.....	4.92	500	....	...	4.75	432	5.00	540	....	....	5.31	706

NOTE.—Relation of gauge height to discharge affected by ice from Dec. 20th, 1914, to Feb. 4th, 1915; discharges for period computed from discharge measurements, observer's notes and climatologic records.

Monthly Discharge of Saugeen River near Port Elgin for 1914-5

Drainage Area, 1,565 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November(1914).	2,990	520	1,166	1.91	.34	.74	.82
December .. .	1,890	460	983	1.21	.29	.63	.73
January ((1915).	1,620	689	1,183	1.04	.44	.76	.88
February	5,943	860	2,890	3.80	.55	1.85	1.92
March.....	3,842	1,774	2,674	2.45	1.13	1.71	1.97
April.....	5,943	1,119	2,591	3.80	.72	1.66	1.85
May	1,153	500	811	.74	.32	.52	.60
June	944	432	608	.60	.28	.39	.44
July.....	1,108	418	515	.71	.27	.33	.38
August	1,037	387	729	.66	.25	.47	.54
September.....	2,742	418	1,138	1.75	.27	.73	.81
October.....	2,489	706	1,309	1.59	.45	.83	.96
The year ...	5,943	387	1,371	3.80	.25	.88	11.90

Saugeen River near Walkerton

Location—At the south line bridge 3½ miles above the Town of Walkerton, near lot 39, concession 2, Township of Brant, County of Bruce.

Records Available—Discharge measurements from June, 1912. Daily gauge heights March 26, 1914, to October 31, 1915.

Drainage Area—895 square miles.

Gauge—Vertical staff 0 to 12 feet on post driven in bed of stream and protected by overhanging tree on right bank 100 feet downstream from bridge. Zero on the gauge is 12.00 feet, which is referred to a B.M. (elevation 35.00) on tension rod of bridge.

Channel and Control—Channel is straight for about 500 feet above and below the section. Both banks are high, and do not overflow. The river bed is composed of clay, one channel existing at all stages.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—Ice greatly affects relation of gauge height to discharge. Measurements are made to determine the approximate winter flow.

Regulation—The dam at Walkerton, about 3½ miles downstream, has no effect on the river stage at this section.

Accuracy—Weeds below the section have a decided effect on the accuracy of the measurements. During the period when weeds are present a different rating curve has been established. There are not sufficient records available to define the two curves at all stages, and therefore discharges cannot be classed as very good.

Observer—Henry Russwurm, Walkerton.

Discharge Measurements of Saugeen River near Walkerton in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
April 24....	Roberts, E	125	568	1.43	16.25	814	.....
May 24....	"	123	484	0.95	15.46	460	.....
June 16....	"	122	504	1.19	15.68	600	.....
July 19....	"	119	458	0.71	15.33	329	.....
" 19....	" ...	119	469	0.74	15.40	350	.....
Aug. 7....	"	123	538	0.98	15.98	529	.....
" 26....	"	122	514	1.02	15.80	527	.....
Sept. 15....	"	124	629	1.58	16.81	992	.....
Oct. 19....	"	124	561	1.17	16.14	657	.....

Daily Gauge Height and Discharge of Saugeen River near Walkerton for 1914-5

Drainage Area, 895 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft*
1	15.17	350	17.17	1670	15.58	405	16.08	640	18.00	1830	16.79	1115	16.08	740	15.29	310	15.17	275	15.14	270	15.29	310	16.42	810
2	15.17	350	17.08	1600	15.50	380	16.08	640	18.00	1830	16.54	975	15.92	665	15.21	290	15.17	275	15.17	275	15.27	305	16.37	785
3	15.25	390	17.00	1545	15.83	485	16.08	640	17.08	1280	16.54	975	15.92	665	15.21	290	15.04	245	15.50	385	15.21	290	16.25	725
4	15.25	390	16.67	550	15.83	485	16.25	710	17.25	1380	16.37	885	15.92	665	15.17	275	15.04	245	15.85	530	15.17	275	16.37	785
5	15.17	350	16.50	1165	15.92	510	16.25	825	17.25	1175	16.88	1165	15.83	625	15.19	280	15.21	290	15.87	540	15.21	290	17.08	1180
6	15.17	350	15.83	660	16.17	600	16.25	825	16.67	900	17.16	1325	15.67	555	15.12	265	15.33	325	15.96	580	15.17	275	18.04	1755
7	15.08	305	15.50	520	16.17	600	16.25	825	16.58	855	17.42	1480	15.75	585	15.08	255	15.29	310	15.96	580	15.04	245	18.12	1810
8	15.25	390	15.67	550	16.25	630	16.25	825	16.50	820	17.88	1760	15.83	625	15.29	310	15.29	310	15.79	505	15.35	330	17.42	1380
9	15.25	390	15.33	430	16.25	630	16.17	785	16.42	780	18.91	2420	15.83	625	15.46	370	15.29	310	15.62	435	15.46	370	17.04	1155
10	15.17	350	15.33	430	16.17	600	16.17	785	16.33	745	19.83	3060	15.83	625	15.37	340	15.21	290	15.54	400	15.54	400	16.79	1015
11	15.17	350	15.50	520	16.08	565	16.17	785	16.25	710	20.66	3640	15.83	625	15.29	310	15.08	255	15.50	385	15.46	370	16.62	920
12	15.17	350	15.42	475	16.17	600	16.25	825	16.25	710	20.80	3740	15.83	625	15.46	370	15.29	310	15.69	460	15.37	340	16.33	765
13	15.33	430	15.42	475	16.17	600	16.25	825	16.42	780	20.04	3210	15.83	625	15.29	310	15.25	300	15.92	565	16.19	695	15.96	580
14	15.50	520	15.33	430	16.17	600	16.92	1190	16.58	855	18.79	2345	15.50	485	15.29	310	15.21	290	15.79	505	16.92	1085	16.08	640
15	15.50	520	15.33	430	16.08	565	16.92	1190	16.96	1210	17.95	1800	15.58	515	15.42	355	15.12	265	15.75	485	16.83	1035	16.17	685
16	15.92	710	15.33	430	16.00	540	16.92	1190	17.00	1230	17.46	1505	15.50	485	15.58	415	15.08	255	15.73	480	16.50	855	16.25	725
17	16.33	1040	15.50	520	16.25	630	16.67	1050	17.12	1300	17.38	1460	15.42	455	15.69	460	15.08	255	15.58	415	16.73	980	16.21	705
18	16.17	870	15.75	600	16.25	630	16.50	955	17.25	1380	17.00	1230	15.25	400	15.58	415	15.25	300	15.46	370	17.08	1180	16.17	685
19	15.92	710	15.75	600	16.33	660	16.50	955	17.33	1430	16.88	1165	15.16	375	15.79	505	15.33	325	15.33	325	16.71	970	16.08	640
20	15.92	710	15.75	600	16.33	660	16.50	955	17.12	1300	16.59	1005	15.33	425	15.42	355	15.35	330	15.29	310	16.46	835	16.17	685
21	15.67	550	15.75	600	16.17	600	16.50	955	17.08	1280	16.42	910	15.25	400	15.42	355	15.29	310	15.25	300	16.29	745	16.21	705
22	15.50	520	15.75	600	16.08	570	16.50	955	17.00	1230	16.29	845	15.50	485	15.37	340	15.12	265	15.29	310	15.96	580	16.08	640
23	15.50	520	15.67	550	16.08	570	18.25	1995	17.12	1300	16.17	785	15.33	425	15.25	300	15.19	280	15.37	340	16.00	600	16.00	600
24	15.42	475	15.42	475	16.08	570	18.42	2105	17.29	1405	16.25	825	15.46	470	15.21	290	15.10	260	15.54	400	15.71	470	15.71	470
25	15.75	600	15.42	475	16.17	600	18.25	1995	18.08	1880	16.17	785	15.42	455	15.21	290	15.06	250	15.83	525	15.73	480	15.64	440
26	16.00	810	15.42	475	16.17	600	18.08	1880	17.96	1805	16.25	825	15.33	425	15.17	375	15.14	270	15.83	525	15.67	455	15.71	470
27	16.50	1165	15.58	565	16.08	570	17.08	1280	17.67	1630	16.17	785	15.33	425	15.12	265	15.12	265	15.58	415	17.67	455	15.54	400
28	16.42	1060	15.58	565	16.08	570	17.08	1280	17.37	1450	16.25	825	15.25	400	15.04	245	15.14	270	15.54	400	18.14	1820	15.54	400
29	16.42	1060	15.75	600	15.92	510	.....	.....	17.21	1355	16.17	785	15.33	425	15.04	245	15.12	265	15.42	355	17.69	1545	15.54	400
30	16.67	1240	15.75	600	15.92	510	.....	.....	17.70	1650	16.17	785	15.25	400	15.04	245	15.12	265	15.50	385	17.00	1130	15.54	400
31	.....	.....	15.67	550	15.92	510	.....	.....	16.96	1210	.....	.....	15.17	375	.....	.....	15.08	255	15.37	340	.....	.....	15.50	385

Monthly Discharge of Saugeen River near Walkerton for 1914-5

Drainage Area 895 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	1,240	305	594	1.39	.34	.66	.73
December "	1,670	430	653	1.87	.48	.73	.84
January .. (1915)	660	380	566	.74	.42	.63	.73
February	2,105	640	1,067	2.35	.72	1.19	1.24
March	1,880	710	1,248	2.10	.79	1.39	1.60
April	3,740	785	1,480	4.18	.88	1.65	1.84
May.....	740	375	519	.83	.42	.58	.67
June.....	505	245	321	.56	.27	.36	.40
July.....	330	245	281	.37	.27	.31	.36
August.....	580	270	442	.65	.30	.49	.56
September.....	1,820	245	657	2.04	.27	.73	.81
October	1,810	385	766	2.02	.43	.86	.99
The year	3,740	245	713	4.18	.27	.80	10.77

Sydenham near Owen Sound

Location—At the highway bridge above the Town of Owen Sound's filtration plant, near lot 9, concession 1, Township of Derby, County of Grey.

Records Available—Discharge measurements and daily gauge heights from June 9 to October 31, 1915.

Drainage Area—71 square miles.

Gauge—Vertical staff 0 to 6 feet on upstream side of first pier from right abutment. Zero on the gauge is 0.00.

Channel and Control—The channel is straight for 200 feet above and below the section, both banks are low but do not overflow, the stream never assuming flood proportions. The bed is composed of solid rock, with two channels during the low-water period. During the high-water stages all the water is confined between the two abutments of the bridge.

Discharge Measurements—Made from the bridge during the high-water period, and from a permanent wading section located 30 feet upstream during the low stages.

Winter Flow—Ice greatly interferes with the metering of this stream.

Regulation—The Town of Owen Sound has a dam 300 feet above this section that is used to supply water for the filtration beds.

Diversions—An additional 750,000 gallons of water per day should be added to the daily flow at this section, which is the approximate amount diverted.

Accuracy—There are not sufficient readings to define a curve at all stages. Discharges between gauge heights .90 and 1.20 are fair.

Observer—Myrtle Cook, Ashley P.O.

Discharge Measurements of Sydenham River near Owen Sound in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
June 9....	Roberts, E....	46	27	1.73	1.14	46	.....
July 11....	"	45	18	0.88	0.89	15	.....
" 20....	"	46	21	1.37	1.00	28	.....
Aug. 12....	"	45	21	1.00	0.98	21	.....
Sept. 17....	"	45	23	1.05	1.00	24	.....
Oct. 21....	"	49	28	1.47	1.14	40	.....

Daily Gauge Height and Discharge of Sydenham River near Owen Sound for 1914-5

Drainage Area, 71 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1																	0.96	21	0.98	23	0.92	18	1.25	57
2																	0.96	21	0.92	18	0.92	18	1.17	46
3																	0.92	18	0.96	21	0.92	18	1.17	46
4																	0.94	20	1.08	34	0.92	18	1.17	46
5																	0.92	18	1.12	39	0.87	14	1.23	54
6																	0.96	21	1.17	46	0.92	18	1.21	51
7																	1.00	25	1.12	39	0.92	18	1.19	49
8																	0.92	18	1.08	34	0.92	18	1.17	46
9															1.17	46	0.92	18	1.06	32	0.92	18	1.17	46
10															1.14	43	0.92	18	1.00	25	0.92	18	1.17	46
11															1.17	46	0.92	18	1.00	25	0.92	18	1.17	46
12															1.14	43	0.92	18	1.02	27	0.92	18	1.17	46
13															1.12	39	0.92	18	1.08	34	1.00	25	1.17	46
14															1.12	39	0.92	18	1.17	46	1.06	32	1.17	46
15															1.12	39	0.92	18	1.17	46	1.08	34	1.12	39
16															1.12	39	0.92	18	1.14	43	1.02	27	1.12	39
17															1.12	39	1.08	34	1.08	34	1.00	25	1.08	34
18															1.12	39	1.08	34	1.02	27	1.00	25	1.12	39
19															1.12	39	1.08	34	1.00	25	1.00	25	1.14	43
20															1.21	51	1.00	25	0.98	23	1.00	25	1.17	46
21															1.17	46	0.98	23	0.92	18	1.02	27	1.14	42
22															1.08	34	0.94	20	0.92	18	1.08	34	1.12	34
23															1.08	34	0.92	18	0.92	18	1.08	34	1.08	34
24															1.06	32	0.92	18	0.92	18	1.08	34	1.08	34
25															1.02	27	0.92	18	0.96	21	1.06	32	1.08	34
26															1.00	25	0.92	18	0.94	20	1.17	46	1.06	32
27															1.00	25	1.02	27	0.92	18	1.25	57	1.04	29
28															1.00	25	1.08	34	0.92	18	1.33	70	1.04	29
29															1.00	25	1.08	34	0.92	18	1.33	70	1.00	25
30															0.96	21	1.06	32	0.92	18	1.31	67	1.04	29
31																	1.00	25	0.92	18			1.08	34

Monthly Discharge of Sydenham River near Owen Sound for 1914-5

Drainage Area 71 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November.(1914)	.....	.....	.....	.....	.....	.....	.....
December "	.....	.....	.....	.....	.....	.....	.....
January .. (1915)	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May	.....	.....	.....	.....	.....	.....	.....
June 9-30.....	51	21	26	.72	.30	.37	.30
July	34	18	23	.48	.25	.32	.37
August	46	18	28	.65	.25	.39	.45
September	70	14	30	.99	.20	.42	.47
October.....	57	25	41	.80	.35	.58	.67
The period.....	70	14	31	.99	.19	.44	2.26

Thames River (Main Stream) near Byron

Location—At the highway bridge known as Kilworth Bridge, 2 miles north-west of The Town of Byron, near the Village of Komoka, Township of Delaware, County of Middlesex.

Records Available—Monthly discharge measurements from March, 1912. Daily gauge heights March 13, 1914, to October 31, 1915.

Drainage Area—1,270 square miles.

Gauge—Vertical staff 0 to 12 feet on centre pier. The zero on gauge (elevation 6.00), which has remained unchanged since established, is referred to a B.M. (elevation 31.21) on downstream side of right abutment.

Channel and Control—Channel is straight above and below section for about 600 feet. The banks are high, and do not overflow or shift to a great extent. The control, however, is not stationary under high-water conditions. The velocity is high.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—Ice is present during the winter period, and measurements are made to determine the winter flow.

Accuracy—During flood stages the high velocity necessitates the taking of surface readings. The station rating curve is fairly well defined for ordinary flows.

Observer—James Bourne, Komoka.

Discharge Measurements of Thames River (Main Stream) near Byron in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Feb. 4....	Murray, W. S...	180	564	0.95	9.42	536 (a)	.....
Mar. 2....	"	230	635	4.08	8.42	2,592 (b)	.....
May 11....	Roberts, E.	221	330	2.45	7.06	809	.....
June 22....	"	174	207	1.08	6.54	224	.....
July 29....	"	221	541	3.42	8.10	1,851	.....
Aug. 6....	"	234	635	3.64	8.50	2,316	.....
Oct. 5....	"	206	406	3.31	7.54	1,344	.....

(a) Ice measurement; ice jam 250 feet below.
(b) Velocity too high and weights insufficient to hold meter in place.

Daily Gauge Height and Discharge of Thames River (main stream) near Byron for 1914-5

Drainage Area, 1270 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	6.42	305	7.67	1385	6.92	325	9.33	1205	8.75	2585	7.25	950	6.75	520	6.42	305	6.33	260	7.46	1165	6.75	520	7.25	950
2	6.42	305	8.08	1835	6.75	280	9.33	560	8.42	2210	7.25	950	6.67	460	6.42	305	6.33	260	7.04	765	6.71	490	7.33	1030
3	6.42	305	7.75	1470	6.83	350	9.33	505	8.17	1930	7.17	880	6.67	460	6.46	325	6.33	260	6.96	690	6.67	4 0	7.83	1560
4	6.42	305	7.33	1030	6.83	350	9.50	535	7.58	1290	7.17	880	6.67	460	6.42	305	6.33	260	7.25	950	6.62	425	7.58	1290
5	6.42	305	7.25	950	6.83	350	9.33	560	7.42	1120	7.75	1470	6.75	520	6.46	325	6.58	400	8.92	2785	6.42	305	7.58	1290
6	6.42	305	7.00	725	6.83	350	9.50	1525	7.33	1030	7.75	1470	6.83	585	6.50	350	6.57	400	8.50	2300	6.58	400	7.67	1385
7	6.42	305	7.92	1655	7.33	575	9.83	1080	7.33	1030	8.00	1745	6.83	585	6.42	305	6.62	425	8.27	2040	6.67	460	7.42	1120
8	6.42	305	7.75	1470	8.00	1745	9.83	1080	7.33	1030	8.00	1745	7.17	880	6.58	400	7.17	880	8.46	2255	6.87	616	7.25	950
9	6.33	260	7.92	1655	8.42	2210	9.75	1965	7.33	1030	8.25	2020	7.17	880	6.96	685	7.25	950	9.04	2928	6.87	616	7.17	880
10	6.33	260	7.67	1385	8.83	2680	9.67	2645	7.33	1030	9.67	3685	7.17	880	6.79	550	7.00	725	8.08	1835	6.83	585	7.17	880
11	6.33	260	7.58	1285	8.83	2680	9.50	3480	7.50	1205	10.08	4175	7.08	795	6.67	460	6.62	425	7.58	1290	6.79	550	7.17	880
12	6.33	260	7.50	1205	8.75	2585	10.08	4175	7.67	1385	9.42	3385	6.92	655	6.62	425	7.12	835	7.92	1655	6.89	616	7.08	795
13	6.42	305	6.58	400	8.75	2585	10.83	5075	7.67	1385	8.75	2585	6.71	490	6.58	400	6.96	690	10.17	4285	7.83	1260	6.96	690
14	6.50	350	6.58	400	8.67	2495	11.50	5340	8.00	1745	8.08	1835	6.75	520	6.58	400	6.83	585	9.25	3180	7.79	1405	7.42	1120
15	6.67	460	6.58	400	8.67	2495	14.83	9875	9.33	3275	7.75	1470	6.67	460	6.58	400	6.67	460	8.46	2255	7.42	1120	8.29	2065
16	6.92	655	6.75	400	8.83	2475	10.33	4475	9.75	3780	7.58	1290	6.67	460	6.62	425	6.58	400	8.50	2300	7.12	835	8.00	1745
17	7.50	1205	6.83	400	8.83	2415	9.92	3985	9.08	2975	7.50	1205	6.67	460	6.67	460	6.50	350	7.87	1600	7.08	795	7.54	1245
18	7.17	880	6.83	400	8.92	2355	9.75	3780	8.50	2500	7.42	1120	6.67	460	6.58	400	6.42	305	7.79	1405	7.04	765	7.25	950
19	7.08	895	6.83	400	8.92	2255	9.17	3085	8.33	2110	7.25	950	6.67	460	6.58	400	6.42	305	7.46	1165	7.00	725	7.29	990
20	6.83	585	6.83	400	9.17	2130	8.75	2585	7.92	1655	7.17	880	6.67	460	6.50	350	6.42	305	7.12	835	6.96	685	7.33	1030
21	6.67	460	6.83	400	9.17	1905	8.58	2390	7.92	1655	7.00	725	6.58	400	6.50	350	6.46	325	6.79	550	6.92	655	7.25	950
22	6.67	460	7.00	410	9.17	1710	8.92	2785	7.75	1470	7.00	725	6.33	260	6.50	350	6.42	305	6.87	615	6.87	615	7.17	880
23	6.58	400	7.17	480	9.25	1525	9.50	3480	7.67	1385	6.96	685	6.25	220	6.50	350	6.42	305	7.21	915	6.79	550	7.00	725
24	6.58	400	7.17	480	9.25	1205	14.25	9180	7.58	1290	7.08	795	6.33	260	6.42	305	6.42	305	7.25	950	6.75	520	6.96	690
25	6.75	520	7.08	410	9.25	1525	11.83	6275	7.50	1205	7.00	725	6.46	325	6.42	305	6.42	305	7.37	1070	6.67	460	6.83	585
26	6.75	520	6.92	350	9.33	1310	10.75	4980	8.75	2585	6.92	655	6.58	400	6.42	305	6.42	305	7.37	1070	6.74	512	6.83	585
27	8.25	2020	6.83	275	9.33	1000	9.67	3685	8.00	1745	6.83	585	6.50	350	6.42	305	6.62	425	7.12	835	9.62	3624	6.79	550
28	8.08	1835	7.00	360	9.25	725	9.25	3180	7.75	1470	6.75	520	6.50	350	6.37	280	6.83	585	6.92	655	8.79	2634	6.75	520
29	7.42	1120	7.00	360	9.33	560	.....	....	7.50	1205	6.92	655	6.50	350	6.33	260	8.29	2065	6.87	615	8.04	1789	6.75	520
30	7.42	1120	6.92	325	9.33	350	.....	....	7.42	1120	6.83	585	6.50	350	6.33	260	8.00	1745	6.83	585	7.54	1247	6.75	520
31	.....	.....	6.92	325	9.33	815	.....	....	7.33	1030	.....	....	6.50	350	.....	.....	8.17	1930	6.83	585	.....	....	6.71	490

NOTE.—Relation of gauge height to discharge affected by ice from Dec. 16th, 1914, to Jan. 5th, 1915, and Jan. 16th, to Feb. 10th, 1915; discharges for period computed from discharge measurements, observer's notes and climatologic records.

Monthly Discharge of Thames River near Byron for 1914-5

Drainage Area, 1,270 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile.			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November. (1914)	2,020	260	589	1.59	.20	.46	.51
December. "	1,835	275	755	1.44	.21	.59	.68
January... (1915)	2,680	280	1,494	2.11	.22	1.18	1.36
February	9,875	505	3,338	7.78	.41	2.63	2.74
March	3,780	1,030	1,692	2.98	.81	1.33	1.53
April	4,175	520	1,378	3.29	.41	1.09	1.22
May	880	220	486	.69	.17	.38	.44
June.....	685	260	368	.54	.20	.29	.32
July..... ...	2,065	260	583	1.63	.20	.46	.53
August	4,285	550	1,488	3.37	.43	1.17	1.35
September	3,624	305	875	2.86	.24	.69	.77
October.....	2,065	490	963	1.63	.39	.76	.88
The year	9,875	220	1,154	7.78	.17	.91	12.33

Thames River (South Branch) near Ealing

Location—At the highway bridge known as Vauxhall Bridge between lots 10 and 11, concession B, between Townships of London and Westminster, County of Middlesex.

Records Available—Daily gauge heights and discharge measurements May 11 to October 31, 1915.

Drainage Area—515 square miles.

Gauge—Vertical staff 0 to 12 ft. on downstream side of first right pier. Elevation of zero on gauge is 4.00, referred to B.M., elevation 30.00.

Channel and Control—The channel is straight above and below for 800 feet. The banks and control are shifting under high-water conditions.

Discharge Measurements—Made from the bridge. During the extreme low water a wading section is used.

Winter Flow—The relation of gauge height to discharge is affected by ice during the winter months.

Accuracy—The rating curve is fairly well defined up to gauge height 8.00 feet.

Observer—Geo. Beadle, London.

Discharge Measurements of Thames River (South Branch) near Ealing in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Feb. 4....	Murray, W. S...	157	262	0.16	.....	43 (a)	.....
May 11....	Roberts, E.....	156	302	1.27	6.98	383	.....
June 23....	"	98	137	0.71	6.12	96 (b)	.....
July 27....	"	151	257	1.07	6.69	273	.....
" 29....	"	164	456	1.63	7.94	746	.....
Aug. 6....	"	189	655	2.16	9.07	1,429	.....
Oct. 5....	"	163	398	1.57	7.60	625	.....

(a) Ice measurement made at McClary's highway bridge, London.
(b) Measurement made at permanent low water section.

Daily Gauge Height and Discharge of Thames River (South Branch) near Ealing for 1914-5

Drainage Area, 515 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft*	*Feet*	*Sec-ft.*
1															6.14	110	5.92	68	6.85	322	6.58	234	7.25	465
2															6.08	96	5.87	60	6.67	261	6.52	216	7.48	557
3															6.12	105	5.96	74	6.58	234	6.44	192	7.75	667
4															6.08	96	6.04	88	7.29	481	6.44	192	7.69	641
5															6.14	110	6.21	127	8.67	1157	6.33	162	7.54	581
6															6.10	100	6.33	162	9.06	1422	6.44	192	7.54	581
7															6.08	96	6.27	142	8.44	1022	6.67	261	7.42	533
8															6.54	222	6.92	347	8.00	790	6.89	336	7.10	410
9															6.75	287	7.25	465	7.71	649	6.94	354	7.06	396
10															6.50	210	6.75	287	7.52	573	6.83	315	6.75	287
11													7.00	375	6.42	186	6.48	204	7.33	497	6.75	287	6.83	315
12													6.81	308	6.33	162	6.73	280	7.50	565	6.79	301	6.75	287
13													6.64	252	6.27	142	6.62	246	8.39	994	7.96	770	6.67	261
14													6.58	234	6.14	110	6.46	198	8.52	1067	7.92	750	7.54	581
15													6.52	216	6.21	127	6.33	162	8.21	895	7.42	533	8.25	917
16													6.42	186	6.25	137	6.29	147	7.75	667	7.19	441	7.83	705
17													6.37	172	6.27	142	6.25	137	7.62	613	7.12	417	7.46	549
18													6.42	186	6.25	137	6.17	117	7.64	621	7.17	434	7.21	449
19													6.39	177	6.21	127	6.14	110	7.31	489	6.92	347	7.17	434
20													6.33	162	6.17	117	6.18	120	7.00	375	6.83	315	7.04	389
21													6.35	167	6.14	110	6.16	115	6.83	315	6.77	294	6.96	361
22													6.35	167	6.21	127	6.16	115	6.92	347	6.83	315	6.85	322
23													6.29	147	6.08	96	6.04	88	7.27	473	6.73	280	6.75	287
24													6.25	137	6.06	92	5.98	77	7.31	489	6.67	261	6.69	267
25													6.23	132	6.02	84	6.17	117	7.46	549	6.58	234	6.67	261
26													6.29	147	6.00	80	6.33	162	7.37	513	7.35	505	6.60	240
27													6.27	142	5.94	72	6.62	246	7.04	389	9.21	1527	6.58	234
28													6.27	142	5.92	68	6.77	294	6.85	322	8.64	1139	6.54	222
29													6.21	127	5.96	74	7.50	565	6.71	273	8.06	820	6.52	216
30													6.12	105	5.98	77	7.33	497	6.71	273	7.50	565	6.50	210
31													6.12	105			7.00	375	6.69	267			6.46	198

Monthly Discharge of Thames River (South Branch) near Ealing for 1914-5

Drainage Area 515 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)							
December							
January (1915)							
February							
March							
April							
May 11–31	375	105	180	.73	.20	.35	.27
June	287	68	123	.56	.13	.24	.27
July	565	60	200	1.10	.12	.39	.45
August	1,422	234	578	2.76	.45	1.12	1.29
September	1,527	162	433	2.97	.31	.84	.94
October	705	198	414	1.37	.38	.80	.92
The period	1,527	60	330	2.97	.12	.64	4.14

Thames River (North Branch) near Fanshaw

Location—At the highway bridge near Fanshaw Post Office, between lots 8 and 9, concessions 4 and 5, Township of London, County of Middlesex.

Records Available—Daily gauge heights and discharge measurements May 13 to October 31, 1915.

Drainage Area—650 square miles approximately.

Gauge—Vertical staff 0 to 12 feet on right abutment, downstream side. Elevation of zero on gauge 4.00 is referred to a B.M. (elevation 30.00) on tension rod, downstream side, 170 feet from the initial point for soundings.

Channel and Control—The channel is straight above and below section for 500 feet. The bed of the stream is composed of clay and gravel, the banks are high and will not overflow. The channel and control is shifting during high-water periods.

Discharge Measurements—Made from the bridge and at a permanent wading section about 500 feet above during low water.

Accuracy—There are not sufficient records available to define rating curve at all stages.

Observer—Allen Donley, London.

Discharge Measurements of Thames River (North Branch) near Fanshaw in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Feb. 4....	Murray, W. S...	82	81	1.91	.....	156(a)	.....
May 13....	Roberts, E.....	88	158	0.99	7.00	157(b)	.....
June 23....	"	89	139	0.65	6.75	90(b)	.....
July 27....	"	89	137	0.67	6.73	92(b)	.....
" 29....	"	171	733	1.04	8.12	764	.....
Aug. 6....	"	171	699	0.88	7.93	618	.....
Oct. 5....	"	171	716	1.09	3.05	782	.....

(a) Ice measurement made at Richmond Street Highway Bridge, London.
(b) Measurement made at permanent low water section.

Daily Gauge Height and Discharge of Thames River (North Branch) near Fanshaw for 1914-5

Drainage Area, 650 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1															6.60	70	6.46	49	7.27	243	6.87	119	7.71	457
2															6.46	49	6.29	29	7.29	251	6.79	103	7.71	457
3															6.54	61	6.35	35	7.21	219	6.77	99	7.75	485
4															6.56	64	6.48	52	7.58	380	6.75	95	7.77	499
5															6.60	70	6.60	70	8.46	1015	6.75	95	7.75	485
6															6.56	64	6.93	132	8.33	917	6.75	95	7.67	432
7															6.35	35	6.73	91	8.58	1109	6.85	115	7.62	402
8															6.96	140	7.06	168	8.50	1045	6.73	91	7.35	275
9															7.25	227	6.87	119	9.67	1981	6.87	119	7.42	304
10															6.96	140	6.98	145	9.54	1877	6.75	95	7.27	243
11															6.79	103	6.81	107	7.83	542	7.00	150	7.23	227
12													7.00	150	6.71	87	6.75	95	7.69	444	6.75	95	7.62	402
13													6.96	140	6.73	91	6.67	80	9.98	2229	7.00	150	7.83	542
14													6.87	119	6.52	58	6.81	107	8.25	857	7.25	235	7.79	513
15													6.79	103	6.81	107	6.67	80	8.33	917	7.25	235	7.69	444
16													6.79	103	6.81	107	6.71	87	8.17	797	7.02	156	7.46	322
17													6.75	95	6.87	119	6.58	67	8.50	1045	7.25	235	7.37	283
18													6.79	103	6.75	95	6.37	37	7.79	513	7.25	235	7.31	259
19													6.79	103	6.69	83	6.42	43	7.58	380	7.25	235	7.12	187
20													6.62	73	6.77	99	6.25	25	7.33	267	7.00	150	7.42	304
21													6.71	87	6.46	49	6.46	49	7.27	243	7.00	150	7.35	275
22													6.73	91	6.64	76	6.52	58	7.12	187	7.06	168	7.37	283
23													6.77	99	6.56	64	6.62	73	7.17	204	6.87	119	7.31	259
24													6.56	64	6.42	43	6.50	55	7.10	180	6.79	103	7.25	235
25													6.58	67	6.52	58	6.58	67	7.17	204	6.75	95	7.04	162
26													6.79	103	6.50	55	6.42	43	7.26	239	7.25	235	7.06	168
27													6.58	67	6.48	52	6.46	49	7.00	150	7.69	444	7.08	174
28													6.73	91	6.37	37	6.50	55	7.00	150	8.58	1109	6.98	145
29													6.50	55	6.42	43	7.83	542	6.98	145	8.75	1245	7.00	150
30													6.50	55	6.44	46	7.77	499	6.94	135	8.08	730	6.94	135
31													6.39	39			8.46	1015	6.94	135			6.98	145

Monthly Discharge of Thames River (North Branch) near Fanshaw for 1914-5

Drainage Area 650 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914).	.....	.....	.....	.....	.....	.....	.....
December	.....	.....	.....	.....	.....	.....	.....
January (1915).	.....	.....	.....	.....	.....	.....	.....
February	.....	.....	.....	.....	.....	.....	.....
March	.....	.....	.....	.....	.....	.....	.....
April	.....	.....	.....	.....	.....	.....	.....
May 12-31	150	39	90	.23	.06	.14	.10
June	227	35	80	.35	.05	.12	.13
July	1,015	25	133	1.56	.04	.20	.23
August	2,229	135	613	3.43	.21	.94	1.08
September	1,245	91	243	1.92	.14	.37	.41
October	542	135	311	.83	.21	.48	.55
The period	2,229	25	256	3.43	.04	.39	2.50

Regular Stations

SOUTH-WESTERN ONTARIO DISTRICT

Grand River and Tributaries

River	Location	Drainage Area Sq. Miles	Township	County or District
Grand	at Belwood	280	Garafraxa	Wellington Co.
"	at Brantford	2,000	Brantford	Brant Co.
"	near Conestogo	550	Woolwich	Waterloo Co.
"	at Galt	1,360	North Dumfries	"
"	at Glenmorris	1,390	South Dumfries	Brant Co
"	at York	2,280	Oneida	Haldimand Co.
Boston Creek	near York	125	"	"
Conestogo	at St. Jacob's	305	Woolwich	Waterloo Co.
Fairchild's Creek	near Onondaga	115	Onondaga	Brant Co
Galt Creek	at Galt	45	North Dumfries	Waterloo Co
Irvine	near Salem	67	Nicol	Wellington Co.
Nith	near Canning	365	Blenheim	Oxford Co
Speed	near Guelph	77	Guelph	Wellington Co
"	at Hespeler	250	Waterloo	Waterloo Co.
Whiteman's Creek	near Burford	154	Brantford	Brant Co.

Grand River at Belwood

Location—At the bridge in the Village of Belwood, on the 7th concession, Township of Garafraxa, County of Wellington.

Records Available—August 31, 1913, to October 31, 1915.

Drainage Area—280 square miles.

Gauge—Vertical staff 0 to 12 feet on right abutment. Elevation of zero on gauge is 1366.00, which has remained unchanged since established.

Channel and Control—The channel is straight for about 400 feet above and 600 feet below gauging section. The channel bed at the bridge is solid rock, and permanent at all stages. At the permanent low water section, however, the channel is shifting under high water conditions.

Winter Flow—During the winter months the relation of gauge height to discharge is greatly affected by ice, and readings are taken to determine the winter discharge.

Accuracy—The river stage at this section is not affected by any power plants above or below. The rating curve is well defined, and estimates are considered good.

Observer—Lloyd Mosure, Belwood P.O.

Discharge Measurements of Grand River at Belwood in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Feb. 16....	Roberts, E.	83	72	1.29	1,368.16	93 (a)	.....
Mar. 25....	"	110	626	2.30	1,369.66	1,441 (b)	.....
" 25....	"	110	626	2.27	1,369.66	1,422 (b)	.....
Apr. 13....	"	110	571	1.89	1,369.12	1,076 (b)	.....
" 13....	"	110	571	1.84	1,369.10	1,049	.....
May 27....	"	64	32	1.25	1,367.21	39	.....
June 18....	"	68	29	1.10	1,367.16	33	.....
July 12....	"	63	29	1.31	1,367.17	38	.....
" 12....	"	63	29	1.31	1,367.17	39	.....
Aug. 11....	"	70	67	2.50	1,367.61	168	.....
" 11....	"	110	399	0.38	1,367.62	155 (b)	.....
" 27....	"	65	47	1.95	1,367.37	92	.....
" 27....	"	65	48	1.95	1,367.37	93	.....
Sept. 7....	"	70	73	3.01	1,367.73	220	.....
Oct. 5....	"	94	110	3.22	1,368.25	354	.....

(a) Ice measurement.
(b) Measurement made at bridge.

Daily Gauge Height and Discharge of Grand River at Belwood for 1914-5

Drainage Area, 280 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1367.08	18	1368.50	665	1367.42	57	1367.92	77	1368.71	665	1368.08	393	1367.50	120	1367.08	18	1366.92	6	1367.08	18	1367.39	87	1367.81	245
2	1367.08	18	1368.46	639	1367.42	57	1367.92	77	1368.66	645	1368.02	357	1367.46	108	1367.08	18	1366.83	4	1367.08	18	1367.33	72	1368.04	369
3	1367.12	23	1368.35	567	1367.42	57	1367.92	77	1368.66	645	1368.10	405	1367.42	96	1367.08	18	1367.00	10	1367.44	102	1367.29	63	1368.56	704
4	1367.12	23	1367.98	334	1367.39	53	1367.92	77	1368.64	639	1368.31	541	1367.25	55	1367.08	18	1367.04	14	1369.08	1042	1367.25	55	1368.29	528
5	1367.12	23	1367.52	127	1367.37	51	1367.92	77	1368.62	633	1368.85	892	1367.25	55	1367.04	14	1367.17	30	1368.33	554	1367.23	51	1368.17	450
6	1367.00	10	1367.83	255	1367.37	51	1367.66	24	1368.58	626	1368.92	938	1367.25	55	1367.04	14	1367.12	23	1368.23	489	1367.44	102	1368.25	502
7	1367.08	18	1367.50	120	1367.66	105	1367.66	24	1368.58	619	1369.37	1230	1367.25	55	1367.00	10	1367.14	26	1368.29	528	1367.69	191	1368.04	369
8	1367.08	18	1368.00	217	1367.66	105	1367.66	24	1368.54	606	1370.04	1688	1367.33	72	1367.25	55	1367.42	96	1368.29	528	1367.77	226	1367.83	255
9	1367.00	10	1367.85	155	1367.66	105	1367.66	24	1368.54	606	1370.12	1744	1367.62	163	1367.17	30	1367.29	63	1368.02	357	1367.67	183	1367.71	200
10	1367.04	14	1367.75	90	1367.66	105	1367.66	24	1368.50	600	1370.39	1933	1367.67	183	1367.08	18	1367.25	55	1367.81	245	1367.58	148	1367.67	183
11	1367.04	14	1367.56	45	1367.66	105	1367.66	24	1368.50	594	1370.50	2010	1367.50	120	1367.08	18	1367.19	33	1367.64	171	1367.58	148	1367.60	155
12	1367.08	18	1367.37	23	1367.66	105	1367.83	45	1368.50	587	1369.58	1367	1367.50	120	1367.08	18	1367.17	30	1368.23	489	1367.67	183	1367.58	148
13	1367.18	18	1367.25	20	1367.58	77	1367.87	51	1368.50	581	1369.04	1016	1367.50	120	1367.08	18	1367.17	30	1368.83	879	1369.50	1315	1367.50	120
14	1367.25	55	1367.25	20	1367.58	77	1367.89	51	1368.73	815	1368.62	743	1367.50	120	1367.21	47	1367.08	18	1368.44	626	1369.00	990	1368.00	345
15	1367.35	77	1367.29	24	1367.58	77	1368.04	65	1369.20	1120	1368.37	580	1367.50	120	1367.25	55	1367.08	18	1368.21	476	1368.42	613	1367.89	285
16	1367.85	265	1367.29	24	1367.58	77	1368.16	96	1369.76	1492	1368.25	502	1367.46	108	1367.21	47	1367.08	18	1368.04	369	1368.08	393	1367.77	226
17	1367.75	217	1367.20	15	1367.58	77	1368.16	96	1869.62	1394	1368.12	418	1367.25	55	1367.12	23	1367.08	18	1367.79	235	1368.92	943	1367.69	191
18	1367.46	108	1367.31	20	1367.71	105	1368.12	90	1369.58	1367	1367.96	323	1367.25	55	1367.12	23	1367.08	18	1367.58	148	1368.60	730	1367.62	163
19	1367.50	120	1367.35	45	1367.71	105	1368.00	77	1369.58	1367	1367.83	255	1367.25	55	1367.17	30	1367.33	72	1367.52	127	1368.27	515	1367.79	235
20	1367.42	96	1367.46	55	1367.68	99	1368.02	90	1369.77	1499	1367.83	255	1367.25	55	1367.14	26	1367.33	72	1367.39	87	1367.98	334	1367.73	208
21	1367.33	72	1367.42	55	1367.71	99	1368.00	85	1369.66	1422	1367.67	183	1367.17	30	1367.08	18	1367.25	55	1367.33	72	1367.83	255	1367.64	171
22	1367.42	55	1367.46	55	1367.71	96	1368.00	95	1369.51	1321	1367.58	148	1867.25	55	1367.08	18	1367.25	55	1367.35	77	1367.69	191	1367.58	148
23	1367.42	49	1367.42	51	1367.71	90	1368.04	99	1369.78	1506	1367.58	148	1367.25	55	1367.08	18	1367.25	55	1367.42	96	1367.58	148	1367.50	120
24	1367.42	49	1367.42	51	1367.73	80	1368.79	437	1369.54	1341	1367.58	148	1367.21	47	1367.00	10	1367.25	55	1367.54	134	1367.67	183	1367.48	114
25	1367.42	49	1367.42	51	1367.75	77	1369.29	925	1369.79	1513	1367.50	120	1367.21	47	1367.00	10	1367.17	30	1367.62	163	1367.50	120	1367.42	96
26	1367.44	49	1367.33	27	1367.75	70	1368.92	730	1369.46	1289	1367.50	120	1367.25	55	1367.00	10	1367.17	30	1367.46	108	1368.58	717	1367.37	82
27	1367.96	155	1367.35	45	1367.75	65	1369.00	795	1369.08	1042	1368.29	528	1367.25	55	1367.00	10	1367.17	30	1367.39	87	1369.25	1152	1367.35	77
28	1368.29	65	1367.39	51	1367.75	61	1368.71	665	1368.83	879	1367.79	235	1367.25	55	1367.00	10	1367.21	47	1367.33	72	1368.75	827	1367.33	72
29	1367.92	301	1367.42	55	1367.75	57	.....	....	1368.50	665	1367.58	148	1367.17	30	1366.96	8	1367.19	33	1367.33	72	1368.21	476	1367.33	72
30	1367.92	301	1367.42	57	1367.75	55	.....	....	1368.33	554	1367.54	134	1367.10	20	1366.92	6	1367.08	18	1367.62	163	1367.96	323	1367.33	72
31	.....	....	1367.42	57	1367.73	49	.....	....	1368.12	418	.....	....	1367.08	18	.....	....	1367.08	18	1367.46	108	.....	....	1367.33	72

NOTE.—Relation of gauge height to discharge affected by ice from Nov. 22nd to 27th, 1914, and Dec. 8th, 1914, to March 13th, 1915; discharge for the period estimated from discharge measurements, observer's notes and climatologic records.

Monthly Discharge of Grand River at Belwood for 1914-5

Drainage Area, 280 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November. (1914)	301	10	77	1.07	.04	.27	.30
December. "	665	15	130	2.38	.05	.46	.53
January .. (1915)	105	49	79	.37	.17	.28	.32
February	925	24	179	3.30	.09	.64	.67
March	1,513	418	937	5.40	1.49	3.35	3.86
April	2,010	120	650	7.18	.43	2.32	2.59
May	183	18	76	.65	.06	.27	.31
June	55	6	21	.20	.02	.08	.09
July	96	4	35	.34	.01	.13	.15
August	1,042	18	279	3.72	.06	1.00	1.15
September	1,315	51	391	4.70	.18	1.40	1.56
October	704	72	225	2.51	.26	.80	.92
The year	2,010	4	257	7.18	.01	.92	12.45

Grand River at Brantford

Location—At the Toronto-Hamilton-Brantford Railway bridge in the City of Brantford, County of Brant.

Records Available—Discharge measurements from August, 1912. Daily gauge heights July 8, 1913, to October 31, 1915.

Drainage Area—2,000 square miles.

Gauge—Vertical staff, 0 to 12 feet on left abutment. Elevation of zero on gauge is 643.00, which has remained unchanged since established.

Channel and Control—The bed is not shifting under ordinary conditions. The channel above has been narrowed considerably by the building of the Lake Erie & Northern Railway right-of-way. Directly below section a bridge for this same railway is now built that has four piers, the back water from which is quite apparent. During the freshet, ice is liable to jam at this point.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice, and measurements are made to determine the winter flow.

Regulation—The Western Counties Electric Company have a dam 1,000 feet above this section that does not cause fluctuations that are noticeable in the river stage. Their plant is not running at its full capacity.

Diversions—The Western Counties Electric Company use about 50 second feet for power purposes.

Accuracy—With the exception of a slight angle at section these records can be classified as good. The back water caused through the construction work of the Lake Erie & Northern Railway bridge, 150 feet below this section, necessitated the use of more than one curve.

Observer—John Anguish, Brantford.

Discharge Measurement of Grand River at Brantford in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 16....	Roberts, E	330	416	1.73	645.34	723 (a)	.....
" 25....	"	330	443	1.90	645.52	744 (a)	.....
Feb. 11....	"	330	450	1.74	645.92	783 (a)	.....
" 19....	"	420	924	2.17	646.73	2,006 (a)	.....
" 22....	"	390	785	2.02	646.25	1,590 (a)	.....
" 27....	"	281	1,671	3.14	647.83	5,257 (b)	.....
Mar. 1....	"	281	1,475	2.46	647.16	3,633 (b)	.....
" 9....	"	281	1,089	1.71	645.76	1,864	.....
" 18....	"	366	1,929	3.14	647.83	6,067	.....
" 19....	"	371	1,781	2.87	647.46	5,111	.....
" 20....	"	371	1,707	2.76	647.25	4,705	.....
April 10....	"	373	2,311	3.59	648.83	8,303	.....
" 12....	"	373	2,534	3.78	649.37	9,571	.....
" 15....	"	281	1,315	2.68	646.65	3,522	.....
May 3....	"	281	959	1.08	645.19	1,037	.....
June 2....	"	238	794	0.59	644.76	467 (c)	.....
" 4....	"	278	868	0.79	645.06	688	.....
" 17....	"	278	935	1.11	645.23	1,050	.....
" 25....	"	238	773	0.60	644.71	532	.....
" 30....	"	238	768	0.49	644.64	375	.....
July 15....	"	238	791	0.81	644.79	645	.....
Aug. 2....	"	278	936	0.87	645.23	821	.....
" 3....	"	278	926	0.87	645.20	814	.....
" 4....	"	281	1,322	1.90	646.69	2,539	.....
" 5....	"	373	2,366	3.05	649.01	7,237	.....
" 21....	"	364	1,057	0.85	645.42	902	.....
Sept. 3....	"	363	1,006	0.84	645.35	847	.....
" 24....	"	363	1,081	0.99	645.48	1,073	.....
Oct. 16....	"	365	1,419	1.65	646.46	2,343	.....

(a) Ice measurement 100 feet above regular section.
(b) Abutment under construction at bridge immediately below which is piled up with ice.
(c) Construction work 150 feet downstream affecting gauge.

Daily Gauge Height and Discharge of Grand River at Brantford for 1914-5

Drainage Area, 2,000 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	644.50	370	645.60	1660	644.94	410	645.58	600	647.25	3740	646.14	2528	645.29	1197	644.71	560	644.06	208	645.33	920	645.52	1122	645.92	1596
2	644.50	370	646.27	2756	645.04	480	645.64	700	646.83	3300	645.92	2172	645.29	1197	644.69	540	644.31	265	645.14	736	645 33	920	645.96	1648
3	644.50	370	646.29	2792	645.04	450	645.66	710	646.50	2905	645.96	2236	645.21	1093	644.83	680	644.48	358	645.00	620	645.17	763	647.46	4160
4	644.46	346	645.98	2268	645.10	434	645.75	730	646.33	2579	645.87	2082	645.04	894	644.75	600	644.39	305	646.29	2134	645.04	652	647.12	3526
5	644.50	370	645.58	1628	645.08	426	645.83	750	646.00	2300	646.25	2720	645.00	850	644.77	620	644.71	560	648.87	7104	645.00	620	646.69	2793
6	644.50	370	645.29	1197	645.14	450	645.87	770	646.00	2300	647.00	4200	645.00	850	644.71	560	644.73	580	647.79	4820	645.06	668	646.42	2342
7	644.54	402	645.04	894	645.29	550	645.89	790	645.83	2028	647.50	5250	644.98	830	644.79	640	644.77	620	647.25	3760	645.12	718	646.25	2070
8	644.33	275	644.87	720	645.46	750	645.92	800	645.66	1756	648.12	6586	645.06	916	644.79	640	644.96	810	647.14	3562	645.69	1318	646.00	1700
9	644.46	346	644.87	720	645.50	800	645.83	800	645.71	1836	648.42	7360	645.42	1380	645.75	600	645.21	1093	647.08	3456	646.08	1812	645.71	1392
10	644.42	322	644.71	560	645.37	680	645.87	800	645.75	1900	648.92	8550	645.42	1380	645.39	1336	645.29	1197	646.62	2674	645.96	1648	645.62	1234
11	644.48	358	644.87	720	645.54	883	645.92	800	645.75	1900	649.92	11160	645.37	1308	645.17	1044	644.98	830	646.12	1870	645.58	1188	645.52	1122
12	644.50	370	644.75	600	645.50	800	645.87	800	645.94	2204	649.37	9675	645.21	1093	644.94	790	644.92	770	645.98	1674	645.46	1056	645.50	1100
13	644.56	418	644.79	640	645.46	730	645.87	800	646.10	2460	648.04	6402	645.10	960	644.94	790	644.77	620	648.50	6290	648.00	5240	645.39	980
14	644.54	402	644.66	510	645.46	730	645.92	850	646.18	2596	647.17	4557	645.10	960	645.04	894	644.79	640	648.92	7214	650.08	9800	645.42	1012
15	644.58	434	644.46	346	645.46	720	646.16	1020	646.89	3980	646.50	3200	645.02	872	644.94	790	644.81	660	647.42	4080	648.14	5520	646.04	1756
16	644.75	600	644.55	410	645.39	730	646.42	1280	647.81	5901	646.29	2792	645.06	916	645.02	872	644.71	560	646.69	2793	647.00	3320	646.37	2262
17	645.20	1080	644.60	450	645.35	800	646.54	1580	647.87	6027	646.04	2364	644.96	810	645.21	1093	644.62	470	646.33	2198	646.44	2374	646.00	1700
18	645.18	1056	644.65	500	645.39	850	646.75	2060	647.79	5859	645.92	2172	644.92	770	645.18	1056	644.60	450	645.94	1622	646.71	2827	645.85	1510
19	644.98	830	644.68	530	645.42	872	646.71	2012	647.54	5334	645.79	1964	644.89	740	645.00	850	644.73	580	645.71	1342	646.69	2793	645.64	1258
20	644.87	720	644.62	470	645.39	850	646.52	1820	647.42	5082	645.58	1628	644.83	680	644.87	720	644.56	418	645.39	980	646.27	2102	645.77	1414
21	644.75	600	644.66	510	645.44	750	646.31	1660	647.42	5082	645.42	1380	644.77	620	644.94	790	644.46	346	645.50	1100	645.94	1622	645.79	1438
22	644.83	680	644.70	550	645.42	650	646.16	1612	647.33	4893	645.29	1197	644.89	740	644.98	830	644.71	560	645.42	1012	645.73	1366	645.62	1234
23	644.85	700	644.65	500	645.35	550	646.20	1660	647.08	4368	645.21	1093	644.81	660	644.98	830	644.83	680	645.69	1318	645.54	1144	645.48	1078
24	644.83	680	644.71	560	645.46	650	646.71	2460	647.58	5418	645.21	1093	644.83	680	644.92	770	644.81	660	645.69	1318	645.37	960	645.35	940
25	644.75	600	644.66	510	645.54	750	647.66	4200	648.71	8025	645.17	1044	644.83	680	644.72	570	644.71	560	645.58	1188	645.27	860	645.23	820
26	644.83	680	644.58	434	645.52	750	648.50	6310	648.71	8025	645.19	1068	644.85	700	644.71	560	644.75	600	646.10	1840	645.33	920	645.25	840
27	644.87	720	644.58	434	645.54	750	647.83	4830	647.83	5943	645.25	1145	644.96	810	644.50	370	644.71	560	646.00	1700	646.87	3099	645.17	763
28	645.20	1080	644.65	500	645.54	740	647.12	3600	647.20	4620	645.17	1044	644.89	740	644.67	520	644.79	640	645.46	1056	647.79	4820	645.17	763
29	645.60	1660	644.65	500	645.50	700	.....	.....	646.62	3440	646.04	2364	644.77	620	644.56	418	644.92	770	645.37	960	646.83	3031	645.21	800
30	645.54	1564	644.65	500	645.37	550	.....	.....	646.12	2494	645.58	1628	644.83	680	644.39	305	645.64	1724	645.27	860	646.29	2134	645.21	800
31	.....	.....	644.65	500	645.33	450	.....	.....	646.16	2562	.....	.....	644.87	720	.....	.....	645.79	1964	645.33	920	.....	.....	645.17	763

NOTE.—Relation of gauge height to discharge affected by ice from Dec. 15th, 1914, to March 4th, 1915; discharges for the period computed from discharge measurements, observer's notes and climatologic records.

Monthly Discharge of Grand River at Brantford for 1914-5

Drainage Area, 2,000 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile.			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914).	1,660	275	626	.83	.14	.31	.36
December "	2,792	346	834	1.40	.17	.42	.48
January (1915).	872	410	667	.44	.21	.33	.38
February	6,310	600	1,672	3.15	.30	.84	.87
March	8,025	1,756	3,899	4.01	.88	1.95	2.25
April.....	11,160	1,044	3,419	5.58	.52	1.71	1.91
May	1,380	620	882	.69	.31	.44	.51
June	1,336	305	721	.67	.15	.36	.40
July	1,964	208	679	.98	.10	.34	.39
August	7,214	620	2,359	3.61	.31	1.18	1.36
September	9,800	620	2,214	4.90	.31	1.10	1.23
October	4,160	763	1,508	2.08	.38	.75	.86
The year.....	11,160	208	1,621	5.58	.10	.81	11.00

Grand River near Conestogo

Location—At the highway bridge ¼ mile below the Village of Conestogo, Township of Woolwich, County of Waterloo.

Records Available—July 16, 1913, to October 31, 1915.

Drainage Area—550 square miles.

Gauge—Vertical staff 0 to 12 feet on the centre pier of bridge. Elevation of zero is 1017.00.

Channel and Control—The channel is straight for about 300 feet above and below the gauging section. The banks are low and liable to overflow. The bed is composed of gravel, and all the water is confined between the abutments of the bridge, except at a very serious flood. In flood stages the banks and bed are liable to shift.

Discharge Measurements—Made from the bridge during high water, and at a permanent low water section located 600 feet upstream during the low water period.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice during the winter season, and measurements are made to determine the winter flow.

Accuracy—The slight shifting of the channel has little affect. The rating curve is well defined, and records are good.

Observer—E. Schinbein, Conestogo.

Discharge Measurements of Grand River near Conestogo in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Feb. 17....	Roberts, E.	153	181	1.47	1,019.75	266(a)	.....
Mar. 26....	"	243	733	2.95	1,020.92	2,163(b)	.....
Apr. 12....	"	251	834	3.10	1,021.25	2,587(b)	.....
" 12....	"	251	834	3.15	1,021.33	2,628(b)	.....
May 27....	"	130	85	1.01	1,018.21	85	.....
" 27....	"	130	84	1.02	1,018.21	86	.....
June 18....	"	130	105	1.35	1,018.43	142	.....
July 13....	"	136	151	2.05	1,018.76	311	.....
Aug. 12....	"	236	567	2.30	1,020.29	1,309	.....
" 27....	"	130	155	1.90	1,018.77	297	.....
" 27....	"	130	156	1.93	1,018.77	302	.....
Sept. 9....	"	148	221	2.69	1,019.35	596	.....
" 9....	"	149	222	2.60	1,019.35	589	.....
Oct. 5....	"	228	468	2.02	1,019.75	943	.....

(a) Ice measurement.
(b) Measurement at bridge section.

Daily Gauge Height and Discharge of Grand River near Conestogo for 1914-5

Drainage Area, 550 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.
1	1017.94	43	1019.73	927	1018.75	90	1019.18	90	1020.75	1435	1019.46	698	1018.69	246	1018.02	53	1017.94	43	1018.11	66	1018.75	270	1019.14	464
2	1017.94	43	1019.79	981	1018.71	80	1019.30	130	1020.52	1390	1019.33	594	1018.62	218	1017.96	45	1017.89	37	1018.12	67	1018.52	178	1020.33	1533
3	1017.94	43	1019.60	810	1018.69	77	1019.33	150	1020.14	855	1019.35	610	1018.69	246	1018.04	56	1018.00	50	1019.71	909	1018.33	109	1020.25	1445
4	1017.98	48	1019.31	578	1018.74	80	1019.37	160	1020.08	794	1019.42	666	1018.60	210	1018.08	61	1018.00	50	1021.14	2456	1018.31	103	1019.87	1060
5	1017.96	45	1018.96	360	1018.73	77	1019.44	170	1019.96	690	1020.37	1577	1018.54	186	1018.00	50	1018.17	75	1020.37	1577	1018.17	75	1019.75	945
6	1018.06	58	1018.50	170	1018.71	74	1019.39	170	1019.94	650	1020.48	1698	1018.54	186	1017.92	40	1018.33	109	1020.00	1190	1018.58	202	1019.60	810
7	1017.98	48	1018.52	178	1019.00	115	1019.16	86	1019.87	570	1020.83	2160	1018.52	178	1018.02	53	1018.23	86	1020.19	1380	1019.37	626	1019.44	628
8	1017.87	35	1018.39	127	1018.94	115	1019.29	109	1019.77	570	1021.58	2962	1018.73	262	1019.54	762	1018.79	286	1020.10	1290	1019.54	762	1019.14	464
9	1017.79	27	1018.44	146	1018.98	130	1019.37	130	1019.75	556	1021.96	3399	1018.73	262	1018.73	262	1018.73	262	1019.75	945	1019.52	746	1019.08	428
10	1017.87	35	1018.54	186	1018.95	115	1019.31	121	1019.73	650	1022.52	4043	1018.92	340	1018.46	154	1018.37	121	1019.29	563	1019.00	380	1018.92	340
11	1017.94	43	1018.62	218	1019.00	130	1019.37	150	1019.89	730	1022.66	4204	1018.75	270	1018.29	98	1018.17	75	1019.04	404	1018.73	262	1018.85	310
12	1018.00	50	1018.52	178	1019.06	146	1019.39	150	1019.96	855	1021.37	2720	1018.64	226	1018.08	61	1018.21	82	1020.29	1489	1018.60	210	1018.81	294
13	1018.27	94	1018.35	115	1019.02	146	1019.33	130	1019.94	873	1020.58	1812	1018.73	262	1018.00	50	1018.48	162	1021.96	3399	1023.29	4928	1018.79	286
14	1018.35	115	1018.35	115	1019.04	146	1019.35	130	1020.14	840	1020.20	1390	1018.69	246	1018.08	61	1018.23	86	1020.44	1654	1020.96	2249	1019.44	682
15	1018.20	80	1018.40	130	1019.10	150	1019.62	242	1020.96	1720	1019.79	981	1018.62	218	1018.56	194	1018.04	56	1019.77	963	1020.21	1401	1019.69	891
16	1018.85	310	1018.45	150	1018.98	115	1019.73	282	1021.37	2465	1019.58	794	1018.52	178	1018.50	170	1017.96	45	1019.60	810	1019.71	909	1019.27	549
17	1018.94	350	1018.40	130	1018.89	72	1019.71	270	1021.25	2410	1019.44	682	1018.46	154	1018.42	138	1017.89	57	1019.17	482	1020.12	1310	1019.08	428
18	1018.46	154	1018.25	90	1018.96	64	1019.71	270	1020.87	2065	1019.25	535	1018.35	115	1018.31	103	1017.92	40	1018.94	350	1020.14	1330	1019.08	428
19	1018.66	234	1018.33	109	1019.10	77	1019.62	222	1020.66	1890	1019.04	404	1018.39	127	1018.27	94	1018.10	64	1018.71	254	1019.79	981	1019.12	452
20	1018.37	121	1018.33	109	1019.14	90	1019.54	182	1020.87	2145	1018.92	340	1018.35	115	1018.12	67	1018.23	86	1018.62	218	1019.35	610	1019.12	452
21	1018.46	154	1018.35	115	1019.04	80	1019.50	178	1020.73	1985	1018.94	350	1018.29	98	1018.19	78	1018.23	86	1018.56	194	1019.27	549	1019.04	404
22	1018.27	94	1018.43	142	1019.10	86	1019.50	170	1020.73	1985	1018.73	262	1018.29	98	1018.14	70	1018.18	77	1018.67	238	1019.04	404	1018.87	318
23	1018.37	121	1018.43	142	1019.10	90	1019.57	210	1020.62	1858	1018.69	246	1018.08	61	1017.92	40	1018.14	70	1018.62	218	1018.89	326	1018.75	270
24	1018.64	226	1018.25	90	1018.96	64	1020.58	310	1022.00	3445	1018.69	246	1018.10	64	1017.94	43	1018.10	64	1018.79	286	1018.73	262	1018.67	238
25	1018.42	138	1017.85	33	1019.04	80	1021.79	2295	1021.71	3111	1018.62	218	1018.19	78	1017.98	48	1018.08	61	1019.50	730	1018.71	254	1018.62	218
26	1018.50	170	1017.90	38	1019.12	94	1021.18	1892	1020.96	2249	1018.83	302	1018.33	109	1018.04	56	1018.17	75	1019.08	428	1019.46	698	1018.52	178
27	1018.56	194	1018.15	72	1019.16	100	1021.14	1870	1020.77	2030	1018.79	286	1018.39	127	1017.96	45	1018.21	82	1018.92	340	1020.92	2203	1018.50	170
28	1019.25	535	1018.15	72	1019.14	100	1020.96	1665	1020.14	1330	1018.77	278	1018.25	90	1017.89	37	1018.75	270	1018.62	218	1020.46	1676	1018.48	162
29	1019.12	452	1018.15	72	1019.13	100	.....	....	1019.85	1020	1018.67	238	1018.19	78	1017.92	40	1018.54	186	1018.52	178	1019.54	762	1018.50	170
30	1019.25	535	1018.15	72	1019.06	84	.....	....	1019.62	828	1018.73	262	1018.06	58	1017.82	30	1018.46	154	1018.46	154	1019.35	610	1018.46	154
31	.....	....	1018.20	80	1018.96	64	.....	....	1019.50	730	.....	....	1018.14	70	.....	....	1018.25	90	1018.75	270	.....	.....	1018.21	82

NOTE.—Relation of gauge height to discharge affected by ice from Dec. 15th, 1914, to March 18th, 1915; discharge for the period computed from climatologic records, discharge measurements and observer's reports.

Monthly Discharge of Grand River near Conestogo for 1914-5

Drainage Area 550 Square Miles.

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in inches on Drainage Area
November (1914)	535	27	153	.97	.05	.28	.31
December.. "	981	33	217	1.78	.06	.39	.45
January. . (1915)	150	64	98	.27	.12	.18	.21
February	2.295	86	426	4.17	.16	.77	.80
March.....	3,445	556	1,443	6.26	1.01	2.62	3.02
April.....	4,204	218	1,163	7.64	.40	2.11	2.35
May.....	340	58	167	.62	.11	.30	.35
June.	762	30	102	1.39	.05	.19	.21
July.....	286	37	99	.52	.07	.18	.21
August.....	3,399	66	765	6.18	.12	1.39	1.60
September	4,928	75	846	8.96	.14	1.53	1.71
October.....	1,533	82	494	2.79	.15	.90	1.04
The year ...	4,928	27	498	8.96	.05	.91	12.26

Grand River at Galt

Location—At the Concession Street bridge, in the City of Galt, Township of North Dumfries, County of Waterloo.

Records Available—July 21, 1913, to October 31, 1915.

Drainage Area—1,360 square miles.

Gauge—Vertical staff 0 to 12 feet on first left pier of the bridge. Elevation of zero on gauge 851.00, which has remained unchanged since established.

Channel and Control—The channel is straight for 1,000 feet above and below the section. The bed is solid rock formation. Residents each year encroach on the natural channel by building up the banks to protect their lots from washing away.

Discharge Measurements—Made from bridge for high stages, and at a permanent wading section 150 feet upstream during low stages.

Winter Flow—Ice slightly affects the relation of gauge height to discharge during the winter, and measurements are made to determine the winter flow. The open-water rating curve is applicable.

Regulation—This section is subject to serious fluctuations in the river stage caused by the operation of the Galt dam situated ¼ mile above.

Accuracy—The rating curve is fairly well defined, and records are good.

Observer—Charles Parker, Galt.

Discharge Measurements of Grand River at Galt in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 2....	Roberts, E.	142	233	1.01	852.29	234 (a)	.....
" 2....	"	142	313	1.04	852.66	325 (a)	.....
Feb. 9....	"	142	286	1.45	852.75	415 (a)	.....
" 27....	"	200	1,053	2.06	854.96	2,170	.....
" 27....	"	200	1,053	2.12	855.00	2,231	.....
Mar. 3....	"	191	749	1.74	854.00	1,303	.....
" 4....	"	191	735	1.66	853.93	1,218	.....
" 16....	"	206	1,273	3.14	856.37	4,004	.....
" 18....	"	206	1,206	2.97	855.96	3,586	.....
" 18....	"	206	1,206	2.95	855.96	3,553	.....
Apr. 13....	"	206	1,168	3.14	856.14	3,666	.....
" 14....	"	200	928	2.28	854.92	2,118	.....
May 8....	"	186	619	0.90	852.97	559	.....
" 21....	"	145	257	1.41	852.40	361 (b)	.....
June 7....	"	139	215	1.04	852.12	224 (b)	.....
July 6....	"	142	251	1.33	852.43	335 (b)	.....
" 6....	"	142	263	1.50	852.52	398 (b)	.....
Aug. 31....	"	189	746	0.94	853.27	702	.....
" 31....	"	189	755	0.99	853.30	754	.....
Sept. 23....	"	189	774	1.04	853.42	808	.....
" 23....	"	189	774	1.07	853.41	823	.....
Oct. 15....	"	196	984	1.62	854.53	1,594	.....

(a) Ice measurement at low water section, river open in centre.
(b) Measurement made at permanent low water wading section.

Daily Gauge Height and Discharge of Grand River at Galt for 1914-5

Drainage Area 1,360 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	852.00	190	853.82	1200	852.18	216	852.54	296	854.81	2052	854.12	1418	853.10	670	852.14	198	851.88	146	852.73	448	853.31	796	853.79	1112
2	852.02	197	854.42	1670	852.21	223	852.85	448	854.29	1581	853.94	1266	852.96	586	852.16	202	852.00	170	852.58	360	853.06	646	853.96	1274
3	852.10	220	854.20	1490	852.18	216	852.87	472	854.12	1418	853.84	1156	852.92	562	852.18	206	851.94	158	852.60	370	852.82	502	855.33	2626
4	852.12	228	853.82	1220	852.33	259	852.83	448	853.98	1301	853.96	1274	852.86	526	852.19	208	851.92	154	855.92	2386	852.60	370	854.79	2030
5	852.19	250	853.39	900	852.41	284	852.68	360	853.73	1074	854.92	2172	852.79	484	852.16	202	852.28	244	856.27	3868	852.56	350	854.39	1661
6	852.08	215	852.79	505	852.31	253	852.64	340	853.70	1050	855.37	2674	852.75	460	851.96	162	852.48	312	855.48	2814	852.71	436	854.21	1499
7	852.12	228	852.39	315	852.56	350	852.64	340	853.52	924	855.94	2412	852.81	496	852.14	198	852.54	336	855.21	2492	853.29	784	854.08	1382
8	851.98	185	852.50	370	852.57	355	852.73	388	853.41	856	857.04	5004	852.96	586	852.44	296	852.69	415	855.08	2348	853.92	1238	853.77	1106
9	851.96	180	852.24	267	852.60	370	852.75	400	853.34	814	857.77	6290	853.31	796	853.48	898	853.32	802	854.87	2117	854.17	1463	853.52	924
10	852.15	238	852.22	260	852.56	350	852.73	388	853.28	778	858.02	6804	853.30	790	852.87	532	852.99	604	854.35	1625	853.74	1082	853.39	844
11	852.19	250	852.33	300	852.71	436	852.69	365	853.44	874	858.92	8926	853.24	754	852.67	412	852.56	344	853.81	1139	853.35	820	853.35	820
12	852.23	265	852.42	335	842.73	448	852.77	412	853.64	1008	857.29	5413	853.03	628	852.38	274	852.51	325	854.12	1418	853.12	682	853.28	778
13	852.35	305	852.33	300	853.00	610	853.06	586	853.31	1139	856.00	3490	852.94	574	852.33	259	852.57	355	856.62	4370	858.87	8789	853.08	658
14	852.34	303	852.37	315	852.64	394	853.12	682	854.18	1472	855.04	2304	852.97	592	852.29	247	852.70	430	856.39	4036	857.75	6250	853.24	754
15	852.64	432	852.42	335	852.87	552	853.05	640	854.96	2216	854.50	1760	852.77	472	852.32	256	852.47	308	855.12	2392	855.83	3269	854.37	1643
16	853.04	647	852.45	350	852.64	394	853.13	628	855.89	2347	854.18	1472	852.56	350	852.60	370	852.35	265	854.46	1724	854.79	2030	854.00	1310
17	853.44	905	852.32	295	852.39	277	853.26	706	856.02	3518	854.08	1382	852.56	350	852.72	442	852.24	232	853.90	1220	854.35	1625	853.73	1074
18	852.44	590	852.27	277	852.54	340	853.33	748	855.85	3295	853.98	1292	852.52	330	852.60	370	852.08	186	853.63	1001	855.12	2392	853.52	924
19	852.60	412	852.25	270	852.52	330	853.27	712	855.60	2970	853.67	1029	852.46	304	852.42	288	852.18	206	853.30	790	854.44	1706	853.44	874
20	852.50	370	852.04	202	852.56	304	853.20	670	855.50	2840	853.48	898	852.47	308	852.26	238	852.15	200	853.06	646	854.10	1400	853.62	994
21	852.42	335	852.23	265	852.55	300	853.10	610	855.62	2996	853.31	796	852.49	316	852.31	253	852.32	256	852.85	520	853.77	1106	853.49	904
22	852.48	360	852.29	285	852.57	308	853.08	598	855.31	2602	853.10	670	852.30	250	852.26	238	852.47	308	852.31	253	853.54	938	853.29	784
23	852.42	335	852.29	285	852.54	296	853.16	646	855.14	2414	853.06	646	852.34	262	852.19	208	852.68	418	852.33	259	853.35	820	853.18	718
24	852.50	370	852.28	282	852.56	304	853.85	1190	856.27	3868	853.05	640	852.34	262	852.18	206	852.49	316	852.33	259	853.21	736	852.97	592
25	852.48	360	852.04	202	852.71	376	853.77	1029	857.37	5549	853.10	670	852.37	271	852.07	184	852.27	241	852.44	296	853.10	670	852.88	538
26	852.62	420	852.12	226	852.59	316	855.54	2892	856.82	4670	853.05	640	852.46	304	852.00	170	852.39	277	852.96	586	853.36	826	852.89	544
27	852.72	470	852.27	277	852.50	280	855.04	2304	855.87	3321	853.04	634	852.47	308	851.82	134	852.40	280	852.42	288	856.62	4370	852.77	472
28	853.34	835	852.31	294	852.53	292	855.00	2260	855.20	2480	853.96	1274	852.38	274	852.07	184	852.67	412	852.12	194	855.44	2762	852.77	472
29	853.56	1025	825.55	307	852.58	312	.....	.....	854.64	1886	853.83	1157	852.26	238	851.97	164	853.17	712	852.87	532	854.54	1796	852.56	350
30	853.47	930	852.37	315	852.62	330	.....	.....	854.37	1643	853.30	790	852.19	208	851.97	164	853.55	945	853.02	622	854.10	1400	852.62	382
31	.....	.....	852.44	345	852.54	296	.....	.....	854.30	1580	.....	.....	852.12	194	.....	.....	853.28	778	853.35	820	.....	....	852.51	325

Monthly Discharge of Grand River at Galt for 1914-5

Drainage Area, 1,360 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November. (1914)	1,025	180	402	.75	.13	.30	.33
December. "	1,670	202	460	1.23	.15	.34	.39
January .. (1915)	610	216	334	.45	.16	.25	.29
February.....	2,892	296	770	2.13	.22	.57	.59
March.....	5,549	778	2,179	4.08	.57	1.60	1.84
April.....	8,926	634	2,212	6.56	.47	1.63	1.82
May.....	796	194	436	.59	.14	.32	.37
June.....	898	134	272	.66	.10	.20	.22
July.....	945	146	359	.69	.11	.26	.30
August.....	4,370	194	1,361	3.21	.14	1.00	1.15
September.....	8,789	350	1,735	6.46	.26	1.28	1.43
October.....	2,626	325	980	1.93	.24	.72	.83
The year.....	8,926	134	958	6.56	.10	.70	9.56

Grand River at Glen Morris

Location—At the Glen Morris bridge, in the Village of Glen Morris, Township of South Dumfries, County of Brant.

Records Available—Discharge measurements from August, 1912. Daily gauge heights July 21, 1913, to October 31, 1915.

Drainage Area—1,390 square miles.

Gauge—Vertical staff 0 to 6 feet on a post and 6 to 12 feet on a tree on left bank. Elevation of the zero on gauge is 801.00, which has remained unchanged since established.

Channel and Control—The channel is straight for 1,000 feet above and below the section. The bed of the river is composed of gravel and boulders, and banks are permanent. The bed and control is shifting under high water conditions.

Discharge Measurements—Made from bridge during the high water stages, and at permanent wading section located 150 feet upstream during the lower water periods.

Winter Flow—This section is seriously affected by ice which usually floods, forming as many as three or four layers of ice with water between them. Measurements are made during the winter months to determine the winter flow.

Regulation This section is subject to fluctuations in the river stage, due to the storing of water, during the night and at week ends, by the Galt dam, located eight miles above.

Accuracy—Owing to poor natural conditions, the liability of the control to shift and back water caused by ice, the records cannot be considered better than fair.

Observer—Minnie Anderson, Glen Morris P.O.

Discharge Measurements of Grand River at Glen Morris in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 4....	Roberts, E.	191	185	1.39	803.46	257 (a)	.....
" 15....	"	195	276	1.79	803.66	494 (a)	.....
Feb. 12....	"	195	269	1.49	804.16	515 (a)	.....
Mar. 17....	"	281	1,015	3.79	804.66	3,843	.....
" 19....	"	281	959	3.59	804.42	3,441	.....
" 19....	"	281	959	3.69	804.45	3,533	.....
Apr. 12....	"	281	1,325	4.29	805.51	5,690	.....
" 14....	"	281	875	3.08	804.05	2,683	.....
May 22....	"	189	252	1.79	802.50	453 (b)	.....
" 25....	"	189	249	1.77	802.47	442 (b)	.....
June 7....	"	183	190	1.30	802.04	248 (b)	.....
" 18....	"	205	270	1.78	802.54	504 (b)	.....
" 18....	"	198	274	1.75	802.54	504 (b)	.....
July 3....	"	183	203	1.26	802.29	256 (b)	.....
" 9....	"	156	429	2.10	803.03	902 (b)	.....
Aug. 4....	"	281	1,047	3.55	804.87	3,721	.....
" 25....	"	196	425	2.08	803.00	884 (b)	.....
Sept. 23....	"	271	555	1.73	803.06	961	.....
Oct. 15....	"	280	777	2.66	803.90	2,070	.....

(a) Ice measurement.
(b) Measurement made at permanent low water wading section.

Daily Gauge Height and Discharge of Grand River at Glen Morris for 1914-5

Drainage Area, 1,390 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	802.29	335	803.37	680	803.27	225	803.71	500	.....	.....	.....	1446	802.81	700	802.23	312	802.64	236	802.39	385	802.96	850	803.60	1670
2	802.35	365	804.00	710	803.31	230	803.62	500	.....	.....	.....	1291	802.75	645	802.27	328	802.10	260	802.48	438	803.04	934	803.62	1698
3	802.31	345	803.77	790	803.29	235	803.68	500	.....	.....	.....	1178	802.69	592	802.19	296	802.14	276	802.58	506	803.14	1044	803.64	1726
4	802.41	395	803.54	1050	803.42	240	803.60	500	.....	.....	.....	1299	802.64	552	802.10	260	802.08	252	804.56	3336	803.60	520	804.29	2791
5	802.35	365	803.23	1085	803.39	255	803.68	500	.....	.....	.....	2215	802.64	552	802.19	296	802.17	288	805.29	4928	802.54	478	804.23	2677
6	802.31	345	803.00	950	803.35	270	804.10	500	.....	.....	.....	2727	802.62	536	802.21	304	802.39	385	804.46	3130	802.60	520	803.06	956
7	802.33	355	802.50	890	803.60	290	804.14	500	.....	.....	.....	2970	802.64	552	802.23	312	802.52	464	804.35	2910	802.83	720	803.10	1011
8	802.33	355	802.54	790	803.56	310	804.16	500	.....	.....	.....	5109	802.69	592	802.27	328	802.56	492	804.14	2512	803.29	1269	803.17	1077
9	802.35	365	802.56	720	803.52	340	804.10	510	.....	.....	.....	6425	802.94	830	803.10	1000	802.98	870	804.14	2512	803.56	1614	803.79	1945
10	802.35	365	802.60	635	803.60	405	804.14	510	.....	.....	.....	6940	802.98	870	802.77	663	802.75	645	804.23	2677	803.23	1206	803.00	890
11	802.44	415	802.68	575	803.60	455	804.10	515	.....	.....	.....	9104	803.00	890	802.60	520	802.60	520	805.08	4466	803.04	934	802.85	740
12	802.35	365	802.75	530	803.52	475	804.12	515	.....	.....	.....	5521	802.85	740	802.79	681	802.52	464	805.54	5482	802.81	700	802.98	870
13	802.39	385	802.71	490	803.62	485	804.14	598	.....	.....	804.90	4070	802.77	663	802.19	296	802.44	414	804.71	3652	807.25	9500	803.17	1077
14	802.44	415	802.83	450	803.62	490	804.20	696	.....	.....	804.19	2592	802.77	663	802.23	312	802.36	370	805.58	5574	805.71	5885	803.06	956
15	802.62	530	803.04	420	803.62	495	804.29	653	.....	.....	803.78	1930	802.67	576	802.31	345	802.27	328	804.08	2406	804.81	3872	803.10	1000
16	802.87	760	803.06	385	803.56	495	804.40	640	.....	.....	803.44	1452	802.58	506	802.52	464	802.23	312	803.71	1825	804.71	3652	803.04	934
17	803.20	1170	802.98	360	803.60	495	804.52	720	.....	.....	803.32	1304	802.52	464	802.56	492	802.27	328	803.23	1206	803.83	2005	802.94	830
18	803.12	1020	802.98	340	803.68	495	804.50	757	.....	.....	803.28	1258	802.54	478	802.48	438	802.23	312	803.14	1044	802.96	850	802.85	740
19	802.27	330	803.00	320	803.64	495	804.56	726	.....	.....	803.11	1011	802.48	438	802.44	414	802.14	276	802.96	850	803.21	1181	802.94	830
20	802.62	535	803.12	290	803.79	495	804.64	683	.....	.....	803.01	901	802.46	426	802.39	385	802.10	260	802.77	663	803.14	1044	802.81	700
21	802.54	480	803.10	290	803.81	495	804.56	622	.....	.....	802.98	870	802.39	385	802.31	345	802.17	288	802.73	627	803.06	956	802.69	592
22	802.50	450	803.20	280	803.71	495	804.54	610	.....	.....	802.89	780	802.39	385	802.27	328	802.19	296	802.81	700	802.94	830	802.77	663
23	802.56	490	803.18	265	803.64	495	804.36	659	.....	.....	802.81	700	802.37	375	802.23	312	802.52	464	802.77	663	802.81	700	802.69	592
24	802.60	520	803.20	255	803.81	495	804.64	1213	.....	.....	802.77	663	802.39	385	802.19	296	802.44	414	802.87	760	802.69	592	802.64	552
25	802.60	520	803.27	250	803.68	495	804.83	1050	.....	.....	802.81	700	802.44	414	802.10	260	802.44	414	803.00	890	802.75	645	802.73	627
26	802.54	480	803.27	240	803.68	495	.....	2949	.....	.....	802.77	663	802.39	385	802.14	276	802.35	365	803.37	1364	803.19	1099	802.69	592
27	802.77	665	803.27	235	803.64	495	.....	2350	.....	.....	802.81	700	802.46	426	802.12	268	802.31	345	803.14	1044	805.29	4928	802.60	520
28	803.23	1205	803.27	235	803.68	495	.....	2305	.....	.....	803.31	1292	802.56	370	802.14	276	802.48	438	802.96	850	804.69	3609	802.69	592
29	803.27	1250	803.31	230	803.64	495	.....	....	.....	.....	803.42	1426	802.35	365	802.10	260	802.64	552	802.85	740	804.71	3652	802.56	492
30	803.23	1205	803.35	225	803.68	495	.....	....	.....	.....	802.98	870	802.31	345	802.10	260	802.85	740	802.94	830	804.69	3609	802.60	520
31	.....	.....	803.31	225	803.68	495	.....	....	.....	.....	.....	....	802.35	365	.....	....	802.94	836	802.89	780	.....	.....	802.50	450

NOTE.—Relation of gauge height to discharge affected by ice from Dec. 1st, 1914, to Feb. 28th, 1915; discharges for period computed from climatologic records, discharge measurements and observer's reports.

Monthly Discharge of Grand River at Glen Morris for 1914-5

Drainage Area, 1,390 Square Miles

Month	Discharge in Second-feet			Drainage in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	1,250	335	559	.90	.24	.40	.45
December.. "	1,085	225	490	.78	.16	.35	.40
January .. (1915)	490	225	423	.35	.16	.30	.35
February	2,949	500	832	2.12	.36	.60	.62
March.....	.....	.....	.....	.....	.....	.....	.....
April.....	9,104	663	2,313	6.55	.48	1.66	1.85
May.....	890	345	531	.64	.25	.38	.44
June	1,000	260	378	.72	.19	.27	.30
July.....	870	236	416	.63	.17	.30	.35
August.....	5,574	385	1,927	4.01	.28	1.39	1.60
September.....	9,500	478	1,980	6.83	.34	1.48	1.58
October.....	2,791	450	1,010	2.01	.32	.73	.84
The period.....	9,500	225	985	6.83	.16	.71	8.78

Grand River at York

Location—At the highway bridge in the Village of York, Township of Oneida, County of Haldimand.

Records Available—June 25, 1913, to October 31, 1915.

Drainage Area—2,280 square miles.

Gauge—Vertical staff 0 to 5 feet on the first pier from left abutment and 6 to 12 feet on the left abutment. The elevation of zero is 593.00, and has remained unchanged since established.

Channel and Control—The flow is confined between the abutments of the bridge at all stages. The bed of the river is well protected, but shifting during flood stages. A partly demolished dam about 200 feet downstream affects flow, especially at low stages. Part of this old dam is washed out at each flood period.

Discharge Measurements—Taken from the highway bridge, and at a permanent low water section located 800 feet above during the low water period.

Floods—No floods of a serious nature have occurred here since the spring of 1912, when the dam below the bridge was wrecked, the water cutting around the right abutment, greatly increasing the width of the channel. Village residents state the water rose to a gauge height of 606 feet, which would mean approximately 100,000 second feet.

Winter Flow The relation of gauge height to discharge is seriously affected by ice, and measurements are made to determine the winter flow.

Regulation—The nearest dam is at Caledonia, five miles above. The intermittent operation of the mills causes daily fluctuations in the gauge heights.

Accuracy—The conditions of flow are good, except for the fluctuations caused through the Caledonia Mills. Well-defined rating curves have been established, and the records can be considered good. Semi-daily gauge heights will not give a good representative mean. The storage capacity of the Caledonia Mills is large and its operation at various hours through the day is liable to pass section at York during the night, and thus escape the attention of the recorder who reads it daily.

Observer—Stanley Brown, York P.O.

Discharge Measurements of Grand River at York in 1915.

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 18....	Roberts, E.	305	543	1.66	594.36	906 (a)	.....
Feb. 5....	"	314	457	1.60	594.56	734 (a)	.....
" 5....	"	314	457	1.60	594.56	733 (a)	.....
Mar. 22....	"	376	2,042	2.42	596.33	4,953	.....
" 22....	"	376	2,043	2.41	596.33	4,917	.....
" 23....	"	376	1,945	2.13	596.12	4,162	.....
" 25....	"	386	2,236	3.14	596.85	7,030	.....
Apr. 1....	"	366	1,674	1.56	595.39	2,618	.....
" 1....	"	366	1,674	1.61	595.42	2,694	.....
" 7....	"	376	1,971	2.13	596.08	4,205	.....
" 7....	"	376	1,971	2.15	596.16	4,239	.....
" 9....	"	378	2,288	3.00	597.00	6,848	.....
" 9....	"	378	2,327	3.01	597.05	6,993	.....
" 10....	"	378	2,327	3.26	597.08	7,601	.....
" 10....	"	378	2,326	3.24	597.08	7,550	.....
" 12....	"	379	2,631	4.11	597.83	10,824	.....
" 12....	"	379	2,517	3.78	597.50	9,524	.....
" 16....	"	366	1,738	1.59	595.50	2,774	.....
May 29....	"	279	435	1.47	593.73	641	.....
June 11....	"	313	674	1.69	594.00	1,141	.....
" 29....	"	276	387	1.33	593.58	514	.....
" 29....	"	276	383	1.28	593.58	491	.....
July 12....	"	309	520	1.56	594.01	812	.....
" 13....	"	288	469	1.45	593.85	681	.....
" 13....	"	289	487	1.50	593.91	731	.....
" 23....	"	278	398	1.38	593.67	553	.....
" 28....	"	278	409	1.32	593.69	542	.....
Aug. 23....	"	345	1,353	1.00	594.52	1,332	.....
" 23....	"	345	1,353	0.96	594.52	1,292	.....
Sept. 2....	"	340	1,336	0.93	594.43	1,249	.....
" 22....	"	343	1,417	1.22	594.70	1,723	.....
" 22....	"	343	1,417	1.19	594.70	1,689	.....
Oct. 23....	"	340	1,352	0.97	594.47	1,313	.....

(a) Ice Measurement.

Daily Gauge Height and Discharge of Grand River at York for 1914-5

Drainage Area, 2,280 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft*	*Feet*	*Sec-ft.*
1	593.46	376	594.83	1759	593.68	630	594.27	685	596.71	4260	595.27	2444	594.46	1296	593.50	400	593.27	278	594.46	1296	594.37	1197	594.96	1934
2	593.54	428	595.27	2419	593.77	635	594.25	800	596.29	3760	595.10	2140	594.17	990	593.56	442	593.23	262	594.39	1219	594.44	1274	594.83	1759
3	593.56	442	595.53	2857	593.79	640	594.32	800	596.20	3300	595.08	2110	594.04	860	593.56	442	593.31	295	594.44	1274	594.23	1050	595.71	3231
4	593.60	470	595.31	2488	593.79	645	594.35	825	596.06	2940	594.96	1934	594.21	1030	593.56	442	593.17	241	594.79	1707	594.17	990	596.04	4012
5	593.58	456	594.66	1538	593.71	645	594.29	855	595.68	2620	594.92	1878	594.19	1010	593.48	388	593.56	442	597.17	7880	593.98	801	595.67	3153
6	593.52	414	594.54	1388	593.83	650	594.31	880	595.54	2635	594.92	1878	594.17	990	593.46	376	593.39	335	596.75	6200	593.94	763	595.54	2906
7	593.58	456	594.54	1388	594.23	660	594.35	890	595.00	2665	595.83	3489	594.19	1010	593.40	340	593.56	442	596.42	5060	594.04	860	595.29	2453
8	593.56	442	594.46	1296	594.29	670	594.29	935	595.00	2710	596.25	4585	594.19	1010	593.58	456	593.81	644	596.00	3900	594.29	1110	595.04	2050
9	593.54	428	594.27	1090	594.29	680	594.33	935	595.08	2780	597.08	7520	594.27	1090	594.17	990	594.12	940	595.94	3750	594.79	1707	594.81	1733
10	593.50	400	594.00	615	594.33	690	594.37	935	596.08	2855	597.16	7840	594.50	1340	594.37	1197	594.19	1010	595.62	3058	594.96	1934	594.67	1551
11	593.50	400	593.96	615	594.39	715	594.44	935	595.20	2945	597.58	9900	594.44	1274	594.12	940	594.04	860	545.46	2758	594.62	1486	594.50	1340
12	593.56	442	593.85	615	594.39	790	594.48	935	595.29	3050	597.67	10350	594.35	1175	593.96	782	593.98	801	595.04	2050	594.44	1274	594.46	1296
13	593.62	486	593.81	615	594.35	820	594.44	935	595.48	3170	596.92	6880	594.12	940	593.87	698	593.85	680	595.83	3489	594.37	1197	594.39	1219
14	593.64	502	593.78	620	594.35	840	594.44	970	596.04	3310	596.25	4385	594.16	980	593.79	626	593.60	470	597.29	8450	597.83	11180	594.35	1175
15	593.68	536	593.92	625	594.39	865	595.29	1160	596.25	3450	595.83	3489	594.16	980	593.75	592	593.75	592	596.54	5440	597.08	7520	594.46	1296
16	593.81	644	594.12	625	594.27	875	596.00	1460	596.87	3615	595.42	2686	593.96	782	593.73	575	593.75	592	595.75	3315	596.21	4477	595.29	2453
17	594.25	1070	594.62	640	594.25	890	596.04	1800	597.50	3800	594.75	1655	594.04	860	593.79	626	593.77	610	595.35	2590	595.50	2830	595.04	2050
18	594.50	1340	594.44	560	594.27	905	595.96	2350	596.75	4000	594.08	900	594.00	820	593.94	763	593.52	414	595.27	2419	595.35	2560	594.79	1707
19	594.46	1296	594.35	660	594.31	905	595.87	2320	596.62	4216	594.21	1030	594.00	820	593.98	801	593.37	325	594.62	1486	595.69	3191	594.62	1486
20	594.42	1252	594.42	670	594.31	905	595.89	2570	596.52	4425	594.14	960	593.94	763	593.64	502	593.44	364	594.46	1296	595.27	2419	594.52	1364
21	594.37	1197	594.18	660	594.27	900	595.62	1890	596.20	4425	594.10	920	593.81	644	593.64	502	593.39	335	594.44	1274	594.33	1153	594.62	1486
22	594.08	900	594.18	660	594.23	895	595.54	1840	596.37	4425	593.96	782	593.79	626	593.67	526	593.50	400	594.31	1131	594.69	1577	594.56	1412
23	594.20	1020	594.04	660	594.23	890	595.62	1890	596.20	4450	593.92	744	593.75	592	593.69	542	593.56	442	594.25	1070	594.54	1388	594.45	1285
24	594.12	940	594.10	650	594.23	880	595.62	2800	596.14	4290	593.90	725	593.58	456	593.58	456	593.60	470	594.64	1512	594.35	1175	594.33	1153
25	594.10	920	593.92	640	594.17	870	597.08	4800	596.92	6880	593.83	662	593.56	442	593.46	376	593.54	428	594.67	1551	594.25	1070	594.27	1090
26	594.08	900	593.79	640	594.29	855	597.75	7200	596.96	7040	593.75	592	593.75	592	593.29	286	593.56	442	594.58	1436	594.35	1175	594.19	1010
27	594.20	1020	593.85	635	594.27	840	597.29	5500	596.58	5590	593.54	428	593.75	592	593.08	214	593.60	470	595.00	1990	594.35	1175	594.14	960
28	594.25	1070	593.68	630	594.21	830	596.83	4100	596.33	4800	593.79	626	593.79	626	593.17	241	593.54	428	594.62	1486	596.50	5300	593.94	763
29	594.71	1603	593.66	630	594.18	815	.....	....	595.92	3700	593.92	744	593.62	486	593.44	364	593.75	592	594.33	1153	596.00	3900	593.85	680
30	594.75	1655	593.73	630	594.20	805	.....	....	595.58	2980	594.29	1110	593.62	486	593.31	295	593.92	744	594.37	1197	595.42	2686	593.81	644
31	.....	....	593.68	630	594.27	790	.....	....	595.54	2900	.....	.....	593.52	414	.....	.....	594.67	1551	594.25	1070	.....	.....	593.92	744

NOTE.—Relation of gauge height to discharge affected by ice from Dec. 10th, 1914, to March 31st, 1915; discharge for period computed from climatologic records, discharge measurements and observer's notes.

Monthly Discharge of Grand River at York for 1914-5

Drainage Area, 2,280 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	1,655	376	783	.73	.16	.34	.38
December "	2,857	615	976	1.25	.27	.43	.50
January (1915)	905	630	788	.40	.28	.35	.40
February	7,200	685	1,928	3.16	.30	.85	.88
March	7,040	2,620	3,805	3.09	1.15	1.67	1.93
April	10,350	428	4,050	4.54	.18	1.78	1.99
May	1,340	414	838	.59	.18	.37	.43
June	1,197	214	554	.52	.09	.24	.27
July	1,551	241	545	.68	.11	.24	.28
August	8,450	1,070	2,694	3.71	.47	1.18	1.36
September	11,180	763	2,347	4.90	.33	1.03	1.15
October	4,012	644	1,658	1.76	.28	.73	.84
The year	11,180	214	1,743	4.90	.09	.76	10.41

Boston Creek near York

Location—At the second highway bridge known as Anderson's Bridge, above the junction with the Grand River, between Concessions 5 and 6, Township of Oneida, County of Haldimand.

Records Available—June 23, 1913, to May 31, 1915, at first highway bridge. June 1 to October 31, 1915, at Anderson's Bridge.

Drainage Area—125 square miles.

Gauge—Vertical staff 0 to 9 feet, attached to downstream side of left abutment. Elevation of zero on gauge is 600.00.

Channel and Control The channel is straight for 400 feet above and below the gauging section. The river bed is composed of slab rock and is not shifting under normal conditions. The flow passes between the two abutments of the bridge at all stages.

Discharge Measurements Made from the bridge during freshet stages and from a permanent wading section 100 feet above, during the low water period.

Winter Flow—Relation of gauge height to discharge is affected by ice and measurements are made to determine the winter flow.

Accuracy—Records previous to June 1st, 1915, are not very reliable on account of being affected by backwater from the Grand River. Subsequent results are fair.

Observer—H. J. Anderson, Caledonia.

Discharge Measurements of Boston Creek near York in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 19....	Roberts, E	65	92	.83	593.33	76(a)	.....
Feb. 5....	"	67	49	.82	593.60	40(a)	.....
" 5....	"	67	49	.82	593.60	40(a)	.....
Mar. 22....	"	79	280	.61	594.50	169(b)	.....
" 23....	"	79	260.	.70	594.25	183(b)	.....
Apr. 1....	"	79	181	.51	593.25	93(b)	.....
" 7....	"	79	252	.38	594.16	96(b)	.....

(a) Ice jammed from Grand River to gauging station.
(b) Backwater from Grand River.

Discharge Measurements of Boston Creek near York (Anderson's Bridge) in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
May 29....	Roberts, E	43	19	1.13	600.73	22	.....
June 11....	"	42	20	1.30	600.75	26	.....
" 11....	"	42	21	1.36	600.75	29	.....
" 28....	"	41	15	0.86	600.67	13	.....
" 29....	"	41	14	0.92	600.67	13	.....
July 12....	"	42	26	1.30	600.89	34	.....
" 12....	"	41	26	1.46	600.87	38	.....
Aug. 23....	"	42	20	1.11	600.87	22	.....
" 23....	"	42	20	1.54	600.79	31	.....
" 23....	"	42	21	1.46	600.79	30	.....
Sept 22....	"	42	18	0.88	600.73	16	.....
" 22....	"	42	19	0.97	600.73	19	.....
" 22....	"	42	20	0.81	600.73	16	.....
" 22....	"	42	19	0.85	600.73	16	.....
Oct. 23....	"	42	22	0.82	600.77	18	.....

Daily Gauge Height and Discharge of Boston Creek near York for 1914-5

Drainage Area, 125 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharg
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	592.06	12	592.92	82	592.71	26	593.46	56	595.25	375	593.44	146	592.71	61	600.67	14	600.58	6	600.67	14	600.83	31	600.85	33
2	592.14	16	593.16	108	592.75	28	593.54	64	594.68	261	593.27	122	592.58	48	600.67	14	600.60	7	600.92	41	600.75	22	600.85	33
3	592.14	16	593.52	158	592.66	23	593.58	68	594.39	204	593.16	108	592.56	46	600.71	18	600.64	11	600.87	36	600.77	25	600.79	27
4	592.16	17	593.33	130	592.77	30	593.58	68	594.06	149	593.10	101	592.56	46	600.69	16	600.67	14	602.33	201	600.79	27	600.83	31
5	592.14	16	593.12	103	592.75	28	593.64	54	593.83	117	593.18	111	592.56	46	600.67	14	600.75	22	602.83	258	600.79	27	600.83	31
6	592.14	16	592.89	79	592.85	36	593.83	73	593.46	76	593.87	219	592.52	42	600.71	18	600.75	22	602.12	177	600.75	22	600.85	33
7	592.18	18	592.75	65	593.50	90	594.00	90	593.33	63	594.16	277	592.58	48	600.75	22	600.83	31	601.87	149	600.75	22	600.89	38
8	592.10	14	592.48	38	593.60	101	594.04	94	593.43	72	594.60	365	592.62	52	600.75	22	600.83	31	601.71	131	600.75	22	600.87	36
9	592.12	15	592.35	28	593.52	92	594.04	94	593.39	69	595.18	484	592.62	52	600.73	20	600.83	31	601.67	127	600.73	20	600.87	36
10	592.12	15	592.29	24	593.39	79	594.00	90	593.46	76	595.42	440	592.77	67	600.67	14	600.92	41	601.58	117	600.71	18	600.92	41
11	592.12	15	592.35	28	593.39	79	594.08	99	593.56	86	596.12	722	592.81	71	600.73	20	600.87	36	601.46	103	600.71	18	600.92	41
12	592.14	16	592.46	37	593.39	79	594.46	149	593.92	129	596.25	760	592.77	67	600.75	22	600.87	36	601.37	93	600.75	22	600.87	36
13	592.27	23	592.35	28	593.46	86	594.71	190	594.08	152	595.20	488	592.69	59	600.73	20	600.89	38	601.46	103	600.75	22	600.81	29
14	592.14	16	592.27	23	593.52	92	594.81	208	594.25	179	594.42	329	592.64	54	600.71	18	600.89	38	601.50	107	600.75	22	600.77	25
15	592.23	21	592.41	33	593.50	90	595.71	387	594.54	233	593.92	229	592.60	50	600.71	18	600.83	31	601.42	98	600.71	18	600.75	22
16	592.25	22	592.37	30	593.42	82	595.92	429	595.12	329	593.54	161	592.50	40	600.69	16	600.83	31	601.29	84	600.73	20	600.75	22
17	592.27	23	592.35	28	593.31	71	595.92	429	595.20	345	593.35	133	592.52	42	600.67	14	600.85	33	601.21	74	600.75	22	600.75	22
18	592.29	24	592.35	28	593.35	75	595.75	395	595.25	355	593.23	117	592 42	34	600.67	14	600.85	33	601.12	64	600.75	22	600.75	22
19	592.32	26	592.39	31	593.37	77	595.54	353	594.92	289	593.10	101	592.35	28	600.69	16	600.83	31	601.04	55	600.75	22	600.75	22
20	592.34	28	592.33	27	593.37	77	595.25	295	594.66	237	592.98	88	592.31	26	600.67	14	600.75	22	600.87	36	600.75	22	600.75	22
21	592.37	30	592.39	31	593.39	79	595.02	249	594.52	210	592.85	75	592.33	27	600.67	14	600.75	22	600.83	31	600.75	22	600.75	22
22	592.39	31	592.33	27	593.35	75	594.98	241	594.50	206	592.77	67	592.31	26	600.67	14	600.75	22	600.83	31	600.69	16	600.75	22
23	592.42	34	592.28	24	593.39	79	595.12	269	594.25	163	592.71	61	592.25	22	600.67	14	600.73	20	600.77	25	600.67	14	600.75	22
24	592.31	26	592.31	26	593.31	71	596.12	470	594.29	169	592.68	58	592.27	23	600.67	14	600.67	14	600.75	22	600.71	18	600.75	22
25	592.35	28	592.28	24	593.39	79	596.71	512	595.20	345	592.64	54	592.29	24	600.65	12	600.67	14	600.85	33	600.69	16	600.75	22
26	592.39	31	592.35	28	593.39	49	596.89	558	595.62	429	592.69	59	592.31	26	600.67	14	600.67	14	600.92	41	600.73	20	600.75	22
27	592.42	34	592.22	20	593.37	47	596.62	694	595.00	445	592.62	52	592.29	24	600.62	9	600.63	10	600.92	41	600.75	22	600.75	22
28	592.54	44	592.28	24	593.33	43	595.87	504	594.46	337	592.64	54	592.27	23	600.62	9	600.64	11	600.89	38	600.75	22	600.75	22
29	592.87	77	592.39	31	593.33	43	.....	.....	594.02	249	593.00	90	592.25	22	600.64	11	600.67	14	600.85	33	600.75	22	600.71	18
30	592.94	84	592.35	28	593.31	41	.....	.....	593.73	193	592.87	77	592.14	16	600.62	9	600.67	14	600.83	31	600.81	29	600.73	20
31	.....	.....	592.39	31	593.20	32	.....	.....	593.33	130	.....	.....	592.23	21	.....	.....	600.67	14	600.77	25	.....	.....	600.75	22

NOTE.—Relation of gauge height to discharge affected by ice and backwater from Grand River, Dec. 15th, 1914, to March 26th, 1915; discharge for the period estimated from climatologic records, discharge measurements and observer's reports.

Monthly Discharge of Boston Creek near York for 1914-5

Drainage Area, 125 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	84	12	26	.67	.10	.21	.23
December "	158	20	45	1.26	.16	.36	.42
January (1915)	101	23	64	.81	.18	.51	.59
February	694	54	256	5.55	.43	2.05	2.13
March	445	63	215	3.56	.50	1.72	1.98
April	760	52	205	6.08	.42	1.64	1.83
May	71	16	40	.57	.13	.32	.37
June	22	9	15	.18	.07	.12	.13
July	41	6	23	.33	.05	.18	.21
August	258	14	78	2.06	.11	.62	.71
September	31	14	22	.25	.11	.18	.20
October	41	18	26	.33	.14	.21	.24
The year	760	6	83	6.08	.05	.66	9.04

Conestogo River at St. Jacobs

Location—At the highway bridge in the Village of St. Jacobs, Township of Woolwich, County of Waterloo.

Records Available—July 16, 1913, to October 31, 1915.

Drainage Area—305 square miles.

Gauge—Vertical staff 0 to 3 feet on pile near left bank and 3 to 12 feet on the right abutment. Elev. of zero on the gauge is 1057.00, which has remained unchanged since established.

Channel and Control—The channel is straight for about 500 feet above and 1,000 feet below the gauging section. The banks are low, shifting, and liable to overflow. Fine gravel forms the bed of the stream and is not very permanent. The disposal of garbage from the bridge affects the area of the section to some extent. The channel and control has been washed out three times during the high stages this summer.

Discharge Measurements—Made from the bridge during high stages, and at a permanent wading section located 800 feet down stream during the low water period.

Winter Flow—The relation of gauge height to discharge is affected by ice during the winter season.

Regulation—The Snyder mill is located just above this bridge, and its intermittent operation causes variations in the river stage. During the dry season it is possible, when the dam is closed and flash boards on, to hold back practically all the water for a period of 24 hours.

Accuracy—The constantly changing channel and control has necessitated the use of a number of rating curves, and therefore the records cannot be considered very reliable.

Observer—A. Niebergall, St. Jacobs.

Discharge Measurements of Conestogo River at St. Jacobs in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Apr. 12....	Roberts, E.	170	881	1.76	1,060.45	1,555	.....
Apr. 12....	"	171	881	1.80	1,060.46	1,591	.....
May 27....	"	62	31	1.09	1,057.92	34	.....
June 18....	"	60	39	1.05	1,058.00	41	.....
July 13....	"	37	18	1.00	1,057.66	18	.....
Aug. 12....	"	161	637	0.88	1,059.52	564	.....
" 27....	"	91	79	2.57	1,058.58	204	.....
Sept. 9....	"	157	210	1.70	1,059.00	357	.....
Oct. 5....	"	134	120	2.86	1,059.00	343	.....

Daily Gauge Height and Discharge of Conestogo River at St. Jacobs for 1914-5

Drainage Area 305 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1057.77	5	1059.42	494	1057.89	6	1058.83	82	1060.39	1080	1059.00	340	1058.25	87	1057.58	10	1057.48	6	1058.10	55	1058.39	122	1058.67	209
2	1057.87	8	1059.37	460	1058.04	11	1058.81	77	1060.23	927	1058.83	267	1058.29	97	1057.52	8	1057.44	5	1058.00	40	1058.25	87	1060.00	990
3	1057.92	10	1059.35	447	1058.00	9	1058.81	77	1060.18	882	1058.87	283	1058.21	77	1057.54	9	1057.48	6	1058.14	63	1058.23	82	1059.79	802
4	1058.02	14	1059.08	290	1058.04	7	1058.87	92	1060.08	794	1059.12	393	1058.21	77	1057.56	9	1057.44	5	1059.54	621	1058.12	59	1059.21	435
5	1057.83	7	1058.66	118	1058.37	25	1059.00	130	1059.89	653	1059.92	918	1058.19	73	1057.56	9	1057.81	23	1059.67	709	1057.87	28	1059.12	394
6	1057.87	8	1058.68	124	1053.39	27	1058.94	112	1059.77	577	1060.06	1050	1058.14	63	1057.54	9	1057.83	24	1059.69	723	1058.02	43	1058.96	312
7	1057.87	8	1058.52	80	1058.39	27	1058.89	97	1059.66	513	1060.44	1478	1058.17	69	1057.52	8	1057.89	29	1059.19	425	1058.35	112	1058.69	216
8	1057.89	9	1058.62	106	1058.44	33	1058.96	118	1059.64	502	1060.89	2018	1058.23	82	1058.10	55	1057.96	36	1059.08	376	1059.08	376	1058.58	179
9	1057.85	7	1058.71	133	1058.42	30	1055.85	87	1059.60	480	1061.00	2150	1058.50	155	1057.96	36	1057.98	38	1058.75	237	1059.14	403	1058.46	143
10	1057.87	8	1058.50	75	1058.33	22	1058.87	92	1059.37	371	1061.52	2774	1058.52	161	1057.85	26	1057.94	34	1058.77	244	1058.79	251	1058.44	137
11	1057.98	12	1058.39	53	1058.56	35	1058.98	124	1059.50	430	1061.83	3146	1058.29	97	1057.87	28	1057.89	29	1058.62	192	1058.69	216	1058.44	137
12	1058.10	19	1058.31	41	1058.60	40	1059.04	144	1059.54	450	1060.92	2054	1058.23	82	1057.85	26	1057.92	32	1059.21	485	1059.00	340	1058.35	112
13	1058.12	21	1058.08	18	1058.62	43	1059.00	130	1059.92	614	1059.77	786	1058.21	77	1057.85	26	1057.98	38	1060.79	1898	1062.85	4370	1058.85	275
14	1058.18	26	1058.18	26	1058.77	69	1059.00	130	1060.39	1080	1059.33	496	1058.19	73	1057.81	23	1057.87	28	1059.96	954	1061.27	1277	1059.12	394
15	1058.27	36	1058.20	28	1058.75	65	1059.37	285	1061.25	2080	1059.00	340	1058.27	92	1057.92	32	1057.77	20	1059.29	475	1059.52	608	1059.00	340
16	1058.85	185	1058.00	13	1058.71	57	1059.58	403	1062.16	3182	1059.00	340	1058.31	102	1057.87	28	1057.79	21	1059.00	340	1059.29	475	1058.69	216
17	1058.87	193	1057.85	7	1058.81	133	1059.89	617	1062.71	4202	1059.06	367	1058.31	102	1057.88	24	1057.81	23	1058.85	275	1059.37	518	1058.29	97
18	1058.81	169	1058.10	19	1058.77	69	1059.79	543	1061.94	3278	1058.94	313	1058.19	73	1057.87	28	1057.79	21	1058.92	304	1059.52	608	1058.31	102
19	1058.73	140	1057.92	10	1058.89	97	1059.64	439	1061.58	2846	1058.54	167	1058.04	46	1057.83	24	1057.85	26	1058.44	137	1059.00	340	1058.71	223
20	1058.68	124	1057.56	2	1058.85	87	1059.58	403	1061.33	2546	1058.46	143	1057.89	29	1057.77	20	1057.83	24	1058.35	112	1058.73	230	1058.73	230
21	1058.77	154	1057.92	10	1058.89	97	1059.48	344	1061.08	2246	1058.48	149	1057.87	28	1057.73	18	1057.67	14	1058.39	122	1058.54	167	1058.69	216
22	1058.52	80	1058.02	14	1058.85	87	1059.44	322	1060.54	1598	1058.46	143	1057.85	26	1057.71	17	1057.94	34	1058.97	306	1058.48	149	1058.58	179
23	1058.35	47	1058.23	32	1058.83	82	1059.79	543	1060.71	1802	1058.39	123	1057.81	23	1057.64	13	1057.96	36	1058.48	149	1058.48	149	1058.39	122
24	1058.37	50	1058.20	28	1058.85	87	1061.50	2390	1061.08	2246	1058.25	87	1057.92	32	1057.62	12	1057.89	29	1058.60	185	1058.44	137	1058.29	97
25	1058.20	28	1058.27	36	1058.89	97	1062.16	3182	1061.18	2366	1058.29	97	1057.92	32	1057.64	13	1057.92	32	1059.04	358	1059.62	674	1058.19	73
26	1058.60	100	1058.23	32	1058.85	87	1061.42	2294	1061.04	2198	1058.23	82	1057.89	29	1057.60	11	1057.94	34	1059.44	559	1060.40	1430	1058.25	87
27	1058.96	232	1058.16	24	1058.73	61	1060.81	1562	1061.02	2174	1058.31	102	1057.92	32	1057.62	12	1058.06	49	1058.89	291	1060.62	1694	1058.23	82
28	1059.27	397	1058.23	32	1058.73	61	1060.68	1406	1060.18	1178	1059.06	367	1057.83	24	1057.52	8	1058.02	43	1058.46	143	1059.73	754	1058.21	78
29	1059.00	250	1058.50	75	1058.73	61	.....	....	1059.39	529	1058.52	161	1057.81	23	1057.48	6	1058.50	155	1058.21	77	1059.37	518	1058.12	59
30	1059.04	270	1058.37	50	1058.77	69	.....	....	1059.08	376	1058.39	123	1057.79	21	1057.46	6	1058.50	155	1058.27	92	1058.67	209	1058.19	73
31	.....	....	1058.35	47	1058.77	69	.....	....	1059.04	358	.....	....	1057.73	18	.....	....	1058.35	112	1058.25	87	.....	.....	1058.25	87

NOTE.—Relation of gauge height to discharge affected by ice from Jan. 2nd to March 14th, 1915; discharges computed from observer's notes, climatologic records and discharge of adjacent drainage basins.

Monthly Discharge of Conestogo River at St. Jacobs for 1914-5

Drainage Area 305 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	397	5	87	1.30	.01	.29	.32
December.	494	2	94	1.62	.01	.31	.36
January .. (1915)	133	6	56	.44	.02	.18	.21
February	3,182	77	579	10.43	.25	1.90	1.98
March	4,202	358	1,437	13.78	1.17	4.71	5.43
April	3,146	82	709	10.31	.27	2.32	2.59
May	161	18	65	.53	.06	.21	.24
June.....	55	6	18	.18	.02	.06	.07
July	155	5	37	.51	.02	.18	.21
August	1,898	40	354	6.22	.13	1.16	1.34
September	4,370	28	548	14.32	.09	1.80	2.01
October	990	59	229	3.25	.19	.75	.86
The year.....	4,370	2	349	14.32	.01	1.14	15.62

Fairchild's Creek near Onondaga

Location—At the highway bridge called Howell's Bridge, lot 16, concession 3, Township of Onondaga, County of Brant.

Records Available—June 28, 1913, to October 31, 1915.

Drainage Area—115 square miles.

Gauge—Vertical staff 0 to 12 feet on left abutment of bridge. Elevation of zero is 621.00.

Channel and Control—Clay and silt decidedly shifting. This section is affected by Grand River backwater during the freshet period.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—The relation of gauge height to discharge is affected by ice, and measurements are made to determine the winter discharge.

Accuracy—The records for low flows are good. There are not sufficient records available to define rating curve at intermediate and high stages.

Observer—Gertrude Ludlow, Cainsville P.O.

Discharge Measurements of Fairchild's Creek near Onondaga in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 6....	Roberts, E.	45	12	1.03	622.04	12 (a)	.....
" 13....	"	48	40	1.08	622.25	44 (b)	.....
" 13....	"	48	40	0.92	622.25	37 (b)	.....
" 13....	"	48	40	1.07	622.25	43 (b)	.....
" 13....	"	48	40	0.92	622.25	37 (b)	.....
" 13....	"	48	40	1.13	622.25	46 (b)	.....
Feb. 13....	"	48	80	1.77	623.58	140 (a)	.....
Mar. 13....	"	48	119	1.96	623.96	234 (c)	.....
April 9....	"	47	47	2.19	622.46	103	.....
May 9....	"	46	34	1.12	622.14	38	.....
June 2....	"	45	19	0.56	621.83	11	.....
July 2....	"	45	15	0.57	621.76	8	.....
" 16....	"	45	17	0.52	621.75	10	.....
" 16....	"	45	17	0.58	621.75	10	.....
" 17....	"	45	16	0.56	621.75	9	.....
" 17....	"	45	17	0.52	621.75	9	.....
Aug. 7....	"	47	55	2.23	622.58	123	.....
" 7....	"	47	55	2.20	622.58	122	.....
" 30....	"	45	27	1.03	622.00	28	.....
" 30....	"	45	27	1.03	622.00	28	.....
" 30....	"	45	27	0.92	622.00	25	.....
Sept. 25....	"	45	28	0.90	622.02	26	.....
Oct. 8....	"	48	58	2.37	622.67	136	.....

(a) Ice measurement.
(b) Ice jam cleared.
(c) Backwater from ice on bank affecting gauge.

Daliy Gauge Height and Discharge of Fairchild's Creek near Onondaga for 1914-5

Drainage Area 115 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	622.00	22	622.18	40	622 04	18	622.33	34	624.05	252	622.50	92	622.00	22	621.92	16	621.77	9	621.85	12	622.17	39	622.17	39
2	621.94	18	622.31	57	622.00	15	622.44	47	623.79	232	622.31	57	622.00	22	621.89	14	621.77	9	621.81	10	622.08	29	622.27	51
3	621.94	18	622.52	96	621.92	11	622.62	77	623.54	222	622.28	52	621.98	21	621.83	11	621.83	11	621.81	10	622.04	26	622.60	112
4	621.96	19	622.51	94	622.00	15	622.63	79	623.25	184	622.27	51	621.98	21	621.89	14	621.85	12	623.29	250	622.00	22	622.58	108
5	621.96	19	622.39	71	622.02	17	622.74	100	623.04	170	622.28	52	622.01	23	621.88	14	621.87	13	623.21	234	621.96	19	622.71	134
6	621.94	18	622.33	60	622.02	17	622.81	114	622.92	152	622.42	77	622.05	26	621.79	10	621.96	19	622.83	158	621.96	19	623.46	284
7	621.96	19	622.25	48	622.14	18	622.89	110	622.73	138	622.48	88	622.00	22	621.77	9	621.87	13	622.57	106	622.06	27	623.00	192
8	621.92	16	622.23	46	622.16	19	622.94	120	622.60	112	622.48	88	622.04	26	621.81	10	621.85	12	622.53	98	622.10	31	622.71	134
9	621.92	16	622.08	29	622.18	21	622.92	116	622.54	100	622.46	84	622.08	29	621.92	16	621.98	21	622.89	170	622.09	30	622.54	100
10	621.92	16	622.02	24	622.27	28	622.89	110	622.75	142	622.52	94	622.17	39	621.81	10	621.94	18	622.62	116	622.08	29	622.44	81
11	621.94	18	622.23	46	622.25	26	622.81	94	624.25	228	623.46	84	622.17	39	621.78	9	621.87	13	622.61	114	622.08	29	622.36	66
12	621.94	18	622.12	33	622.25	26	622.96	124	624.20	226	623.49	90	622.12	33	621.82	11	621.83	11	622.52	96	622.02	24	622.31	57
13	621.98	21	622.08	29	622.24	26	623.50	132	623.96	232	622.64	120	622.08	29	621.81	10	621.83	11	622.60	112	622.08	29	622.28	52
14	621.94	18	622.00	22	622.12	33	623.60	136	224.44	312	622.50	92	622.03	25	621.79	10	621.82	11	622.92	176	623.92	376	622.23	46
15	622.02	24	622.04	26	622.02	24	624.37	212	625.31	472	622.38	69	622.00	22	621.81	10	621.79	10	622.54	100	622.75	142	622.33	60
16	622.08	29	621.92	16	622.00	22	625.00	432	625.54	524	622.31	57	622.05	26	621.85	12	621.77	9	622.44	81	622.44	81	622.43	79
17	622.29	54	621.92	16	622.01	23	624.96	392	624.94	418	622.29	54	622.05	26	621.89	14	621.79	10	622.34	62	622.35	64	622.37	68
18	622.25	48	621.83	11	622.06	19	624.64	328	624.56	352	622.27	51	622.05	26	621.81	10	621.79	10	622.48	88	622.29	54	622.31	51
19	622.23	46	621.83	11	622.11	23	624.31	256	623.52	296	622.23	46	622.00	22	621.77	9	621.76	8	622.37	68	622.25	46	622.29	54
20	622.08	29	621.83	11	622.18	21	623.92	176	623.66	324	622.18	40	622.00	22	621.77	9	621.75	8	622.23	46	622.17	39	622.25	48
21	622.04	26	621.89	14	622.18	21	623.73	132	623.49	290	622.12	33	621.98	21	621.75	8	621.75	8	622.17	39	622.14	35	622.22	45
22	622.04	26	621.85	12	622.16	19	623.96	176	623.12	216	622.04	26	621.96	19	621.77	9	621.83	11	622.12	33	622.12	33	622.20	42
23	622.04	26	621.89	14	622.15	18	624.42	232	623.09	210	622.06	27	621.96	19	621.75	8	621.90	15	622.14	35	622.06	27	622.17	39
24	621.98	21	621.92	16	622.12	17	627.33	482	623.48	288	622.08	29	621.94	18	621.75	8	621.81	10	622.19	41	622.00	22	622.12	33
25	622.00	22	621.89	14	622.20	22	628.68	752	623.18	228	622.12	33	621.87	13	621.77	9	621.79	10	622.17	39	622.00	22	622.10	31
26	622.04	26	621.96	19	622.14	18	627.83	672	623.31	254	622.08	29	621.94	18	621.75	8	621.77	9	622.14	35	622.04	26	622.08	29
27	622.12	33	621.94	18	622.12	17	626.38	584	622.75	142	622.05	26	621.89	14	621.75	8	621.75	8	622.08	29	622.31	57	622.08	29
28	622.12	33	621.92	16	622.12	17	624.92	472	622.56	104	622.03	25	621.88	14	621.77	9	621.79	10	622.04	26	622.44	81	622.08	29
29	622.23	46	621.95	18	622.15	18	.....	.....	622.54	100	622.00	22	621.83	11	621.73	7	621.87	13	622.00	22	622.34	62	622.06	27
30	622.20	42	621.92	16	622.20	22	.....	.....	622.31	57	622.01	23	621.83	11	621.75	8	622.04	26	622.14	35	622.23	46	622.08	29
31	.....	.....	621.95	18	622.25	26	.....	.....	622.41	75	.....	.....	621.85	12	.....	....	621.92	16	622.27	51	.....	.....	622.12	33

NOTE.—Relation of gauge height to discharge affected by ice from Jan. 1st to March 18th, 1915; discharges for the period computed from discharge measurements, observer's notes and climatologic records.

Monthly Discharge of Fairchild's Creek near Onondaga for 1914-5

Drainage Area, 115 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	54	16	26	.47	.14	.23	.26
December "	96	11	31	.83	.10	.27	.31
January.. (1915)	28	11	21	.24	.10	.18	.21
February	752	34	239	6.53	.30	2.08	2.16
March.....	524	57	227	4.55	.49	1.97	2.27
April.....	120	22	57	1.04	.19	.50	.56
May.....	39	11	22	.34	.10	.19	.22
June	16	7	10	.14	.06	.09	.10
July.....	26	8	12	.23	.07	.10	.12
August.....	250	10	80	2.17	.09	.70	.81
September.....	376	19	52	3.27	.17	.45	.50
October	284	27	71	2.47	.23	.62	.71
The year	752	7	70	6.53	.06	.61	8.23

Galt Creek at Galt

Location—At the Kerr Street Bridge in the City of Galt, Township of North Dumfries, County of Waterloo.

Records Available—July 9, 1913, to October 31, 1915.

Drainage Area—45 square miles.

Gauge—Vertical staff 0 to 9 feet on the right abutment of bridge. Elevation of zero on gauge is 893.00, which has remained unchanged since established.

Channel and Control—The channel is straight for 500 feet above and below section. The river bed and banks are both practically permanent. It is bounded on both sides by the G.T.R. and C.P.R.

Discharge Measurements—Made from the upstream side of the bridge at all stages.

Winter Flow—The relation of gauge height to discharge is affected by ice during the winter months, and measurements are made to determine the winter flow.

Accuracy—The rating curve is fairly well defined, and the records can be classed as good.

Observer—Charles Parker, Galt.

Discharge measurements of Galt Creek at Galt in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 2....	Roberts, E.	24	16	1.51	893.75	24 (a)	.....
" 26....	"	24	26	0.86	893.66	22 (a)	.....
Feb. 9....	"	24	22	1.23	893.66	28 (a)	.....
" 27....	"	24	24	2.09	894.66	51 (a)	.....
Apr. 14....	"	24	29	2.33	893.89	67	.....
" 14....	"	24	29	2.33	893.89	67	.....
June 7....	"	24	23	1.43	893.52	32	.....
July 8....	"	24	22	1.27	893.60	28	.....
" 8....	"	24	22	1.27	893.60	28	.....
" 8....	"	24	22	1.36	893.62	30	.....
Aug. 26....	"	24	19	1.23	893.46	23	.....
" 26....	"	24	19	1.18	893.46	22	.....
" 31....	"	24	24	1.54	893.65	37	.....
" 31....	"	24	24	1.54	893.67	37	.....
Sept. 23....	"	24	20	1.15	893.48	23	.....
" 23....	"	24	19	1.26	893.48	24	.....
Oct. 14....	"	24	21	1.36	893.57	28	.....

(a) Ice measurement.

Daily Gauge Height and Discharge of Galt Creek at Galt for 1914-5

Drainage Area 45 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	893.49	21	893.64	35	893.69	26	893.58	18	894.27	59	893.66	37	893.41	17	893.30	12	893.26	11	893.94	69	893.63	34	893.60	31
2	893.48	21	893.74	44	893.97	40	893.60	22	894.02	50	893.62	33	893.40	16	893.36	14	893.31	12	893.64	35	893.53	25	893.96	72
3	893.48	21	893.74	44	893.76	27	893.71	27	893.89	40	893.63	34	893.46	20	893.41	17	893.28	11	893.64	35	893.49	21	893.59	30
4	893.46	20	893.71	41	893.91	39	893.96	35	893.79	39	893.77	47	893.40	16	893.39	16	893.44	18	894.35	139	893.46	20	893.89	62
5	893.37	15	893.61	32	893.77	28	893.64	22	893.75	35	893.62	33	893.46	20	893.37	15	893.57	28	894.83	225	893.45	19	893.88	60
6	893.38	15	893.48	21	894.02	39	893.77	27	893.62	31	893.69	39	893.44	18	893.33	13	893.52	24	894.75	211	893.54	26	893.81	51
7	893.34	14	893.37	15	894.29	50	893.95	39	893.56	27	893.77	47	893.48	21	893.31	12	893.54	26	894.48	162	893.71	41	893.71	41
8	893.33	13	893.66	37	894.87	78	894.00	45	893.65	35	893.81	51	893.51	23	893.36	14	893.57	28	894.19	110	893.81	51	893.56	27
9	893.37	14	893.74	49	894.92	92	893.68	26	893.68	38	893.98	75	893.67	37	893.48	21	893.75	45	894.00	78	893.62	33	893.51	23
10	893.39	16	893.81	51	894.56	46	893.66	27	893.66	36	894.00	78	893.65	35	893.47	20	893.59	30	893.76	46	893.56	27	893.51	23
11	893.36	14	893.68	38	894.33	40	893.71	28	893.71	41	894.01	80	893.58	29	893.34	14	893.48	21	893.63	34	893.52	24	893.56	27
12	893.33	13	893.68	38	894.20	31	893.85	31	893.81	51	894.04	84	893.53	25	893.34	14	893.42	17	893.73	43	893.50	22	893.47	20
13	893.48	21	893.75	45	893.98	25	894.10	37	893.85	56	893.93	67	893.49	21	893.35	14	893.41	17	893.96	72	893.62	33	893.50	22
14	893.51	23	893.92	66	893.64	19	894.23	46	894.04	84	893.75	45	893.50	22	893.35	14	893.50	22	893.98	75	893.69	39	893.61	32
15	893.56	36	894.37	143	893.62	19	894.16	40	894.31	132	893.73	43	893.44	18	893.37	14	893.92	66	893.82	53	893.81	51	893.66	36
16	893.83	54	894.25	121	893.61	18	894.20	43	894.56	177	893.54	26	893.43	18	893.45	19	893.60	31	893.71	41	893.89	62	893.57	28
17	893.82	53	893.59	30	893.66	20	894.25	45	894.35	139	893.58	29	893.42	17	893.35	14	893.50	22	893.69	39	894.04	84	893.56	27
18	893.66	36	893.48	21	893.71	22	894.35	56	894.12	98	893.59	30	893.45	19	892.33	13	893.43	18	893.58	29	893.77	47	893.54	26
19	893.64	35	893.44	18	893.71	22	894.14	45	894.08	89	893.60	31	893.40	16	893.34	14	893.38	15	893.48	21	893.60	31	893.56	27
20	894.16	105	893.40	16	893.69	22	893.81	37	894.00	78	893.58	29	893.44	18	893.33	13	893.35	14	893.48	21	893.57	28	893.56	27
21	893.83	54	893.46	20	893.71	22	893.75	35	893.96	75	893.54	26	893.42	17	893.33	13	893.40	16	893.48	21	893.52	24	893.53	25
22	893.48	21	893.46	20	893.64	19	893.85	37	893.94	69	893.50	22	893.44	18	893.34	14	893.33	13	893.54	26	893.44	18	893.52	24
23	893.75	45	893.56	27	893.62	19	894.00	46	894.25	121	893.48	21	893.36	14	893.35	14	893.34	14	893.45	19	893.48	21	895.50	22
24	893.89	62	893.58	29	893.55	16	894.48	66	893.75	45	893.51	23	893.37	15	893.31	12	803.34	14	893.43	18	893.48	21	893.52	24
25	893.42	17	893.42	17	893.52	16	894.87	110	894.04	86	893.51	23	853.45	19	893.29	12	893.32	13	893.40	16	893.49	21	893.46	20
26	893.44	18	893.48	21	893.56	17	895.00	94	894.04	86	893.50	22	893.64	35	893.30	12	893.32	13	893.72	42	893.59	30	893.46	20
27	893.51	23	893.54	26	893.61	19	894.85	84	894.04	86	893.47	20	893.57	28	893.29	12	893.37	15	893.46	20	893.76	46	893.50	22
28	893.54	26	893.53	25	893.57	17	894.71	72	893.98	75	893.52	24	893.34	14	893.26	11	893.56	27	893.43	18	893.76	46	893.44	18
29	893.44	18	893.58	29	893.50	14	.....	.....	894.16	105	893.44	18	893.33	13	893.25	10	893.71	41	893.43	18	893.54	26	893.43	18
30	893.51	23	893.56	27	893.60	17	.....	.....	893.87	59	893.42	17	893.35	14	893.26	11	893.73	43	893.65	35	893·52	24	893.42	17
31	.....	.....	893.60	31	893.39	12	.....	.....	893.68	38	.....	.....	893.32	13	.....	.....	893.98	75	893.69	39	.....	.....	893.42	17

NOTE.—Relation of gauge height to discharge affected by ice from Dec. 26th, 1914, to March 5th, 1915; discharge for period computed from climatologic records, discharge measurements and observer's reports.

Monthly Discharge of Galt Creek at Galt for 1914-5

Drainage Area, 45 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1915)	105	13	29	2.33	.29	.64	.71
December. "	143	15	38	3.18	.33	.84	.97
January .. (1915)	92	12	29	2.04	.27	.64	.74
February	110	18	44	2.44	.40	.98	1.02
March.....	177	27	70	3.93	.60	1.56	1.80
April.....	84	17	38	1.87	.38	.84	.94
May.....	37	13	20	.82	.29	.44	.51
June	21	10	14	.47	.22	.30	.33
July.....	75	11	24	1.67	.24	.53	.61
August	225	18	58	5.00	.40	1.29	1.49
September.....	84	18	32	1.87	.40	.71	.79
October.....	72	17	30	1.60	.38	.67	.77
The year	225	10	36	5.00	.22	.80	10.68

Irvine River near Salem

Location—At the highway bridge known as Watt's Bridge about 1½ miles above Salem on the blind line between the 11th and 12th concessions, lot 14, Township of Nichol, County of Wellington.

Records Available—Old section, July to October, 1913; November 1, 1913, to October 31, 1915, present section.

Drainage Area—67 square miles.

Gauge—Vertical staff 0 to 9 feet attached to the centre pier of bridge. Elevation of zero on gauge is 1297.00, which has remained unchanged since established.

Channel and Control—The river bed and banks are composed of solid rock, and consequently permanent.

Discharge Measurements—During the flood of 1914 an attempt was made to obtain a meter reading from the bridge, but owing to a velocity of about 14 feet per second it was found impossible to keep the meter in the water. During the low stages a permanent wading section is located 100 feet upstream.

Winter Flow—The relation of gauge height to discharge is somewhat affected when ice is present at the station. Meter measurements are made during that period to determine the winter discharge.

Accuracy—The open channel rating curve is well defined up to gauge height 1298.50 feet, and records of discharge up to 400 sec. feet are good.

Observer—Annie Barber, Salem.

Discharge Measurements of Irvine River near Salem in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Feb. 16....	Roberts, E	48	28	1.59	1,298.25	44 (a)	.....
May 27....	"	44	10	1.00	1,297.33	11	.....
June 17....	"	44	13	1.30	1,297.38	17	.....
July 12....	"	44	10	1.00	1,297.33	10	.....
Aug. 27....	"	47	30	2.03	1,297.75	61	.....
" 27....	"	47	28	2.25	1,297.77	63	.....
Sept. 9....	"	55	47	3.74	1,298.17	175	.....
" 9....	"	55	48	3.33	1,298.12	160	.....
Oct. 5....	"	48	32	2.50	1,297.83	80	.....

(a) Ice measurement; ice causing backwater at gauge.

Daily Gauge Height and Discharge of Irvine River near Salem for 1914-5

Drainage Area, 67 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft*
1	1297.19	4	1297.46	12	1297.33	12	1297.54	16	1298.12	157	1298.00	120	1297.58	37	1297.19	5	1297.14	3	1297.33	12	1297.69	52	1297.75	63
2	1297.17	4	1297.46	109	1297.25	7	1297.60	22	1297.96	110	1298.00	120	1297.58	37	1297.17	4	1297.23	6	1297.30	10	1297.60	39	1298.58	350
3	1297.17	4	1297.46	70	1297.33	12	1297.62	24	1297.83	79	1298.00	120	1297.50	27	1297.20	5	1297.25	7	1297.62	42	1297.51	28	1298.37	253
4	1297.19	4	1297.43	63	1297.33	12	1297.62	24	1297.75	63	1298.08	144	1297.50	27	1297.17	4	1297.23	6	1299.17	729	1297.39	16	1297.92	99
5	1297.19	4	1297.42	19	1297.33	12	1297.62	24	1297.66	48	1298.34	241	1297.50	27	1297.17	4	1297.62	42	1298.51	315	1297.33	12	1297.87	88
6	1297.18	4	1297.39	19	1297.33	12	1297.62	24	1297.62	42	1298.44	283	1297.47	24	1297.17	4	1297.44	21	1298.50	310	1298.00	120	1297.83	79
7	1297.17	3	1297.42	19	1297.56	34	1297.62	24	1297.58	37	1298.54	330	1297.46	25	1297.17	4	1297.62	42	1298.58	350	1298.50	310	1297.75	63
8	1297.26	3	1297.50	13	1297.62	42	1297.62	24	1297.66	48	1298.71	421	1297.57	35	1297.21	5	1297.92	99	1298.46	292	1298.46	292	1297.74	61
9	1297.35	3	1297.42	12	1297.68	51	1297.58	20	1297.79	70	1298.82	488	1297.79	70	1297.29	9	1297.64	45	1298.21	189	1298.25	205	1297.69	52
10	1297.48	3	1297.33	12	1297.92	99	1297.58	20	1297.75	63	1299.13	701	1297.71	56	1297.29	9	1297.48	25	1297.90	94	1297.87	88	1297.63	43
11	1297.31	3	1297.33	7	1297.89	92	1297.62	22	1297.50	27	1298.83	494	1297.54	32	1297.29	9	1297.42	19	1297.71	56	1297.62	42	1297.59	38
12	1297.31	3	1297.33	9	1297.81	74	1297.66	26	1297.60	39	1298.38	257	1297.50	27	1297.25	7	1297.75	63	1299.29	813	1298.21	189	1297.58	37
13	1297.33	12	1297.33	8	1297.75	63	1297.83	32	1297.52	31	1298.08	144	1297.62	42	1297.21	5	1297.79	70	1300.92	1954	1299.87	1219	1297.58	37
14	1297.26	16	1297.33	5	1297.66	48	1297.87	37	1297.89	92	1298.08	144	1297.56	34	1297.54	32	1297.60	39	1299.17	729	1299.25	785	1298.46	292
15	1297.33	23	1297.33	5	1297.58	37	1298.12	42	1298.12	157	1298.02	126	1297.50	27	1297.60	39	1297.51	28	1298.42	274	1298.25	205	1298.21	189
16	1297.33	48	1297.33	5	1297.50	27	1298.20	46	1298.25	205	1298.00	120	1297.50	27	1297.54	32	1297.44	21	1297.92	99	1297.92	99	1297.83	79
17	1297.27	48	1297.33	4	1297.54	21	1298.33	237	1298.33	237	1297.96	110	1297.50	27	1297.42	19	1297.40	17	1297.75	63	1297.83	79	1297.83	79
18	1297.25	63	1297.29	6	1297.58	25	1298.25	205	1298.33	237	1297.88	90	1297.37	15	1297.32	11	1297.35	13	1297.75	63	1297.83	79	1297.83	79
19	1297.62	19	1297.29	9	1297.58	25	1298.16	171	1298.46	292	1297.67	49	1297.25	7	1297.30	10	1297.50	27	1297.64	45	1297.83	79	1297.83	79
20	1297.92	19	1297.27	9	1297.50	17	1297.92	99	1298.66	393	1297.67	49	1297.25	7	1297.29	9	1297.50	27	1297.56	34	1297.73	59	1297.83	79
21	1297.88	12	1297.25	9	1297.58	25	1297.87	87	1298.58	350	1297.58	37	1297.27	8	1297.25	7	1297.50	27	1297.49	26	1297.92	99	1297.83	79
22	1297.75	12	1297.25	9	1297.58	25	1297.77	67	1298.58	350	1297.52	29	1297.29	9	1297.25	7	1297.49	26	1297.56	34	1297.81	74	1297.83	79
23	1297.87	11	1297.25	12	1297.58	25	1298.00	120	1298.75	445	1297.50	27	1297.29	9	1297.17	4	1297.45	22	1297.67	49	1297.73	59	1297.77	67
24	1297.87	9	1297.23	15	1297.58	25	1298.54	330	1298.83	494	1297.50	27	1297.29	9	1297.17	4	1297.41	18	1298.02	126	1297.57	35	1297.69	52
25	1297.70	9	1297.23	12	1297.54	21	1298.29	221	1298.83	494	1297.58	37	1297.28	9	1297.17	4	1297.39	16	1298.44	283	1297.51	28	1297.58	37
26	1297.60	9	1297.19	12	1297.50	17	1298.00	120	1298.67	398	1297.50	27	1297.33	12	1297.13	3	1297.46	23	1297.95	107	1298.79	469	1297.58	37
27	1297.58	63	1297.25	12	1297.50	17	1298.42	274	1298.12	157	1297.29	9	1297.29	9	1297.12	3	1297.42	19	1297.75	63	1298.58	350	1297.58	37
28	1297.50	63	1297.23	12	1297.50	17	1298.16	171	1298.29	221	1298.21	189	1297.25	7	1297.08	2	1297.46	23	1297.75	63	1298.54	330	1297.58	37
29	1297.48	36	1297.21	7	1297.46	14	.....	....	1298.13	160	1298.14	164	1297.25	7	1297.08	2	1297.44	21	1297.75	63	1298.32	233	1297.58	37
30	1297.45	36	1297.20	7	1297.46	14	.....	....	1298.04	134	1297.58	37	1297.25	7	1297.08	2	1297.42	19	1297.75	63	1298.00	120	1297.58	37
31	.....	...	1297.21	7	1297.46	14	.....	....	1298.00	120	.....	....	1297.25	7	.....	....	1297.38	16	1297.73	59	.....	....	1297.57	35

NOTE.—Relation of gauge height to discharge affected by ice from Jan.17th to Feb. 16th, 1915; discharge for period computed from climatologic records, discharge measurements and observer's notes.

Monthly Discharge of Irvine River near Salem for 1914-5

Drainage Area 67 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	63	3	18	.94	.04	.27	.30
December "	109	4	17	1.63	.06	.26	.30
January (1915)	99	7	30	1.48	.10	.45	.52
February	330	16	90	4.93	.24	1.34	1.39
March	494	27	189	7.37	.40	2.82	3.25
April	701	27	176	10.46	.40	2.63	2.93
May	70	7	23	1.04	.10	.34	.39
June	39	2	9	.58	.03	.13	.15
July	99	3	27	1.48	.04	.40	.46
August	1,954	10	239	29.16	.15	3.57	4.12
September	1,219	12	193	18.20	.18	2.88	3.21
October	350	35	86	5.23	.52	1.28	1.48
The year	1,954	2	92	29.16	.03	1.36	18.50

Nith River near Canning

Location—At the highway bridge 200 feet upstream from the Grand Trunk Railway bridge lot 2, concession 2, Township of Blenheim, County of Oxford, 1 mile from the Village of Canning.

Records Available—July 5, 1913, to October 31, 1915.

Drainage Area—365 square miles.

Gauge—Vertical staff 0 to 3 feet on pile in centre of stream and 3 to 12 feet on left abutment. Elev. of zero on gauge is 799.00, which has remained unchanged since established.

Channel and Control—Slightly shifting bed; both banks permanent under ordinary conditions. Control only affected by ice jams during the early freshet.

Discharge Measurements—Made from the bridge during high-water stages, and from a permanent wading section 100 feet above during the low-water period.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice during the winter, and measurements are made to determine the winter flow.

Regulation—Fluctuations of a serious nature occur in the river stage at this section, caused through the intermittent operation of the milling plant at Canning, 1½ miles above.

Accuracy—On account of stage variations, these records are not very reliable.

Observer—Lewis Baker, Canning P.O.

Discharge Measurements of Nith River near Canning in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 5....	Roberts, E.	100	77	1.90	801.99	146 (a)	.....
" 14....	"	96	95	2.24	802.23	212 (a)	.....
Feb. 10....	"	98	115	2.62	802.71	300 (a)	.....
" 26....	"	115	825	2.12	807.37	1,756 (b)	.....
Mar. 15....	"	115	388	3.36	803.58	1,305	.....
" 17....	"	115	445	3.54	804.12	1,575	.....
Apr. 8....	"	117	356	2.95	803.14	1,049	.....
" 14....	"	112	284	2.67	802.62	758	.....
" 15....	"	115	242	2.48	802.29	602	.....
May 15....	"	93	72	1.77	801.12	128	.....
" 15....	"	93	74	1.77	801.18	132	.....
June 5....	"	91	71	1.82	801.02	129	.....
" 5....	"	92	78	1.95	801.12	153	.....
July 3....	"	93	71	1.81	801.19	130	.....
" 10....	"	94	79	1.69	801.25	135	.....
" 10....	"	94	82	1.73	801.26	142	.....
" 10....	"	94	83	1.79	801.27	147	.....
Aug. 24....	"	95	132	3.00	802.06	396	.....
" 25....	"	95	130	3.11	802.10	405	.....
Sept. 24....	"	93	77	1.86	801.24	143	.....
" 24....	"	93	76	1.88	801.24	142	.....
Oct. 13....	"	93	93	2.17	801.43	202	.....

(a) Ice measurement.
(b) Ice jam below section.

Daily Gauge Height and Discharge of Nith River near Canning for 1914-5

Drainage Area, 365 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft*
1	801.10	125	802.12	480	801.83	114	802.12	129	804.00	1398	802.02	434	801.39	197	801.04	116	800.89	94	801.85	357	801.48	224	801.29	167
2	801.10	125	802.73	785	801.87	120	802.29	167	804.46	1290	801.98	416	801.33	179	800.94	101	801.08	122	801.67	284	801.37	191	801.84	375
3	801.23	152	802.35	595	801.87	120	802.39	197	803.92	1177	801.83	348	801.29	167	800.87	93	801.06	119	803.77	1362	801.33	179	801.89	375
4	801.12	129	802.10	470	801.92	129	802.56	248	803.50	1067	802.50	670	801.37	191	800.89	94	801.10	125	803.17	1003	801.44	212	801.92	389
5	801.14	133	801.83	348	802.14	182	802.73	307	803.08	974	802.75	795	801.35	185	800.98	107	800.96	104	803.25	1067	801.42	206	802.14	490
6	801.06	119	801.64	274	802.33	239	802.77	323	802.87	858	802.89	870	801.44	212	800.96	104	801.00	110	802.58	710	801.27	162	802.08	461
7	801.02	113	801.71	299	802.37	251	802.68	288	902.96	908	803.08	974	801.39	197	801.00	110	801.04	116	802.37	605	801.19	143	801.85	357
8	800.85	90	801.77	323	802.33	239	802.68	288	803.42	1161	803.37	1134	801.39	197	801.27	162	801.08	122	802.39	615	801.42	206	801.73	307
9	800.92	98	801.79	331	802.33	239	802.60	260	804.00	1500	803.46	1183	801.39	197	801.12	129	801.00	110	802.25	545	801.46	218	801.62	267
10	801.02	113	802.20	520	802.18	194	802.73	307	804.48	1812	803.46	1183	801.46	218	800.98	107	801.02	113	801.92	389	801.37	191	801.67	284
11	800.98	107	801.92	389	802.39	257	802.60	266	804.02	1513	804.62	1903	801.25	157	800.92	98	901.06	119	801.83	348	801.19	143	801.39	197
12	801.04	116	801.60	260	802.20	200	802.85	357	804.37	1740	804.31	1701	801.12	129	800.96	104	801.06	119	802.04	443	801.33	179	801.46	218
13	801.02	113	801.68	254	802.31	233	802.83	348	803.50	1205	803.29	1089	801.14	133	801.02	113	801.08	122	803.64	1284	801.48	224	801.44	212
14	801.20	145	801.64	242	802.31	233	803.04	443	803.48	1194	802.62	730	801.29	167	801.04	116	801.08	122	803.25	1067	803.10	985	801.52	236
15	801.31	173	801.62	236	802.27	221	803.18	510	803.71	1326	802.31	575	801.23	152	801.02	113	801.02	113	803.00	930	802.83	836	801.58	254
16	801.52	236	801.68	254	802.16	188	803.27	555	804.25	1662	802.12	480	801.00	110	801.10	125	800.94	101	802.50	670	801.87	366	801.73	307
17	801.96	407	801.73	239	802.20	200	803.68	760	804.18	1597	802.00	425	801.12	129	801.10	125	800.75	80	802.17	1205	801.54	242	801.81	339
18	801.85	357	801.79	257	802.23	209	803.64	740	804.06	1539	801.94	398	801.00	110	800.96	104	800.87	92	801.87	366	801.56	248	801.77	323
19	801.81	339	801.68	224	802.23	179	803.64	740	803.56	1238	801.81	339	801.17	139	801.06	119	800.83	88	801.75	315	801.62	267	801.75	315
20	801.79	331	801.77	221	802.02	129	803.68	760	803.23	1056	801.73	307	801.14	133	800.96	104	801.10	125	801.62	267	801.77	323	801.56	248
21	801.68	288	801.79	197	802.18	165	803.52	680	803.20	1040	801.64	274	801.19	143	801.02	113	800.98	107	801.60	260	801.50	230	801.64	274
22	801.68	288	801.73	179	802.27	191	803.64	740	803.02	941	801.56	248	801.23	152	800.96	104	800.92	98	801.64	274	801.44	212	801.64	274
23	802.14	490	801.62	129	802.20	170	803.79	815	802.62	730	801.64	274	801.08	122	800.96	104	861.19	143	801.77	323	801.35	185	801.60	260
24	801.87	366	801.71	127	802.20	170	803.49	665	803.08	974	801.60	260	801.00	110	801.04	116	801.02	113	802.21	525	801.39	197	801.50	230
25	801.81	339	801.68	122	802.31	203	806.62	1205	803.66	1296	801.44	212	801.04	116	801.02	113	800.71	76	802.00	425	801.35	185	801.48	224
26	801.62	267	801.81	147	802.12	150	806.93	1760	803.94	1464	801.46	218	801.10	125	800.98	107	800.92	98	802.02	434	801.39	197	801.37	191
27	801.87	366	801.75	117	802.23	179	806.25	1630	803.00	930	801.48	224	801.12	129	800.79	84	801.10	125	802.00	425	801.44	212	801.31	173
28	802.04	443	801.81	127	802.06	137	805.71	1500	802.66	750	801.31	173	801.08	122	800.96	104	801.12	129	801.58	254	802.75	795	801.27	162
29	802.23	535	801.85	135	802.23	179	.....	.....	802.44	640	801.25	157	800.92	98	800.83	88	801.25	157	801.44	212	802.38	610	801.35	185
30	802.12	480	801.85	135	801.98	122	.....	.....	802.29	565	801.46	218	801.04	116	800.50	60	802.35	185	801.48	224	801.10	125	801.23	152
31	.....	.....	801.87	120	802.02	129	.....	.....	802.14	490	.....	.....	801.04	116	.....	.....	802.57	251	801.42	206	.....	.....	801.06	119

NOTE.—Relation of gauge height to discharge affected by ice from Dec. 13th, 1914, to March 4th, 1915; discharge for period computed from discharge measurements, observer's notes and climatologic records.

Monthly Discharge of Nith River near Canning for 1914-5

Drainage Area 365 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square-mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	535	90	246	1.47	.25	.67	.75
December. "	785	117	275	2.15	.32	.75	.86
January.. (1915)	257	114	183	.70	.31	.50	.58
February	1,760	129	606	4.82	.35	1.66	1.73
March.....	1,812	490	1,162	4.96	1.34	3.18	3.78
April	1,903	157	607	5.21	.43	1.66	1.85
May.....	218	98	150	.60	.27	.41	.47
June	162	60	108	.44	.16	.30	.33
July.....	251	76	119	.69	.21	.33	.38
August	1,362	206	561	3.73	.56	1.54	1.78
t ember	985	125	290	2.70	.34	.79	.88
October	490	119	270	1.34	.33	.74	.85
The year.....	1,903	60	380	5.21	.16	1.04	12.53

Speed River near Guelph

Location—At Caraher's highway bridge above the junction of the Speed and Eramosa Rivers and 3¾ miles from the City of Guelph, Township of Guelph, County of Wellington.

Records Available—October 27, 1913, to October 31, 1915.

Drainage Area—77 square miles.

Gauge—Vertical staff 0 to 12 feet, one on each abutment of bridge. Elevation of zero on each gauge is 1126.00, which has remained unchanged since established.

Channel and Control—The channel is straight for 250 feet above and 500 feet below the gauging section. During flood stages the control and banks are liable to shift, as the bed is composed of loose gravel. One channel exists at all stages.

Discharge Measurements—Made from the bridge and from a permanent low water section 300 feet down stream.

Winter Flow—The relation of gauge height to discharge is seriously affected by ice during the winter season, and measurements are taken during that period to determine the winter flow.

Regulation—A small mill is operated one mile and a half upstream. Slight fluctuations are caused only in the dry season, and are hardly noticeable at the gauge.

Accuracy—The open channel rating curve is fairly well defined for flows up to 500 second feet, the discharge for low flows being considered good.

Observer—Hugh Caraher, Guelph.

Discharge Measurements of Speed River near Guelph in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Feb. 18....	Roberts, E.....	60	62	0.89	1,129.25	55 (a)	.....
April 13....	"	70	138	1.50	1,128.92	207 (b)	.....
May 28....	"	46	31	0.86	1,128.21	27	.....
June 19....	"	46	34	1.00	1,128.25	34	.....
July 13....	"	47	48	1.33	1,128.44	64	.....
Aug. 11....	"	55	51	1.33	1,128.51	70	.....
Sept. 7....	"	46	44	1.35	1,128.46	60	.....
" 7....	"	46	46	1.52	1,128.48	70	.....
" 8....	"	58	67	1.88	1,128.75	126	.....
" 8....	"	58	68	2.03	1,128.77	138	.....
Oct. 6....	"	58	64	1.60	1,128.58	103	.....

(a) Ice measurement
(b) Measurement made at bridge section

Daily Gauge Height and Discharge of Speed River near Guelph for 1914-5

Drainage Area, 77 Square Miles.

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	1128.08	19	1128.67	110	1128.75	21	1129.20	43	1129.62	74	1128.54	82	1128.37	53	1128.00	13	1127.92	8	1128.17	28	1128.25	37	1128.71	120
2	1128.12	23	1128.67	110	1128.79	20	1129.20	43	1129.52	65	1128.52	78	1128.37	53	1128.04	16	1127.92	8	1128.17	28	1128.25	37	1129.27	311
3	1128.16	27	1128.67	110	1128.75	17	1129.35	65	1129.42	60	1128.29	42	1128.29	42	1127.96	11	1127.92	8	1128.17	28	1128.25	37	1129.00	204
4	1128.14	25	1128.75	84	1128.75	17	1129.33	62	1129.42	57	1128.25	37	1128.33	47	1128.04	16	1127.92	8	1129.92	563	1128.17	28	1128.62	99
5	1128.08	19	1128.42	60	1128.71	14	1129.33	62	1129.37	56	1128.79	140	1128.25	37	1128.04	16	1128.21	32	1129.46	379	1128.08	19	1128.54	82
6	1128.04	16	1128.20	31	1128.85	26	1129.29	56	1129.35	57	1128.92	178	1128.29	42	1128.00	13	1128.17	28	1129.17	265	1128.33	47	1128.54	82
7	1128.00	13	1127.96	11	1128.85	26	1129.20	43	1129.27	60	1129.12	246	1128.29	42	1128.12	23	1128.17	28	1129.17	265	1128.42	60	1128.50	74
8	1128.00	13	1127.94	9	1128.87	28	1129.29	56	1129.23	65	1129.29	311	1128.75	150	1129.25	37	1128.67	110	1129.00	204	1128.67	110	1128.44	64
9	1128.00	13	1127.92	8	1128.79	20	1129.29	56	1129.20	67	1129.33	327	1128.54	82	1128.67	110	1128.75	130	1128.87	163	1128.62	99	1128.33	47
10	1127.92	8	1127.96	11	1128.83	24	1129.29	56	1129.20	69	1129.58	427	1128.37	53	1128.37	53	1128.33	47	1128.58	90	1128.46	67	1128.33	47
11	1127.92	8	1128.04	12	1128.83	24	1129.29	56	1129.25	74	129.50	595	1128.20	31	1128.25	37	1128.29	42	1128.29	42	1128.29	42	1128.25	37
12	1128.04	16	1128.12	15	1128.85	26	1129.29	56	1129.23	80	1129.33	327	1128.25	37	1128.21	32	1128.17	28	1129.33	327	1128.33	47	1128.27	39
13	1128.16	27	1128.12	15	1128.89	30	1129.31	59	1129.23	86	1128.79	140	1128.42	60	1128.17	28	1128.50	74	1130.08	627	1130.75	895	1128.33	47
14	1128.08	19	1128.04	10	1128.94	36	1129.29	56	1129.48	115	1128.66	108	1128.29	42	1128.08	19	1128.25	37	1129.25	295	1129.71	479	1128.33	47
15	1128.37	53	1128.37	31	1128.94	36	1129.35	62	1129.64	130	1128.64	103	1128.17	28	1128.37	53	1128.17	28	1128.75	130	1128.96	191	1128.60	94
16	1128.96	191	1128.66	65	1128.96	38	1129.31	59	1129.98	204	1128.58	90	1128.08	19	1128.50	74	1128.00	13	1128.62	99	1128.58	89	1128.46	67
17	1128.87	163	1128.25	21	1128.96	38	1129.31	59	1130.16	257	1128.46	67	1128.17	28	1128.33	47	1127.92	8	1128.50	74	1128.92	178	1128.39	56
18	1128.66	108	1128.62	65	1128.98	41	1129.31	59	1129.92	218	1128.46	67	1128.17	28	1128.21	32	1127.87	6	1128.42	60	1128.75	130	1128.33	47
19	1228.54	82	1128.58	57	1129.00	43	1129.29	56	1130.06	214	1128.42	60	1128.12	23	1128.17	28	1128.00	13	1128.42	60	1128.62	99	1128.37	53
20	1128.44	64	1128.37	26	1129.00	43	1129.29	67	1129.98	211	1128.46	67	1128.12	23	1128.17	28	1128.04	16	1128.42	60	1128.50	74	1128.42	60
21	1128.33	47	1128.54	31	1128.94	36	1129.29	76	1129.79	204	1128.46	67	1128.04	16	1128.12	23	1128.67	110	1128.12	23	1128.46	67	1128.33	47
22	1128.37	53	1128.52	26	1129.00	31	1129.31	84	1129.50	172	1128.42	60	1128.08	19	1128.00	13	1128.54	82	1128.00	13	1128.42	60	1128.27	39
23	1128.46	67	1128.68	43	1129.00	31	1129.29	105	1129.33	166	1128.39	56	1128.12	23	1128.00	13	1128.50	74	1128.25	37	1128.29	42	1128.25	37
24	1128.42	60	1128.50	31	1129.04	36	1129.73	117	1129.44	214	1128.39	56	1128.12	23	1128.08	19	1128.29	42	1128.25	37	1128.29	42	1128.25	37
25	1128.39	56	1128.48	24	1129.04	36	1129.96	135	1129.50	276	1129.39	56	1128.12	23	1128.04	16	1128.25	37	1128.50	74	1128.29	42	1128.25	37
26	1128.57	88	1128.50	21	1129.02	33	1129.81	125	1129.37	303	1128.39	56	1128.12	23	1127.96	11	1128.17	28	1128.62	99	1128.62	99	1128.25	37
27	1128.80	143	1128.62	21	1129.04	36	1129.75	103	1129.08	232	1128.54	82	1128.08	19	1127.96	11	1123.17	28	1128.33	47	1129.08	232	1128.25	37
28	1128.73	125	1128.75	21	1129.04	36	1129.71	86	1128.85	157	1128.37	53	1128.12	23	1127.96	11	1128.29	42	1128.25	37	1128.75	130	1128.21	32
29	1128.70	117	1128.77	20	1129.04	36	.....	....	1128.54	82	1128.64	103	1128.17	28	1127.96	11	1128.37	53	1128.21	32	1128.50	74	1128.21	32
30	1128.68	112	1128.75	20	1129.02	33	.....	....	1128.75	130	1128.50	74	1128.04	16	1127.92	8	1128.17	28	1128.33	47	1128.50	74	1128.17	28
31	.....	....	1128.75	20	1129.02	33	.....	....	1128.58	90	.....	....	1127.96	11	.....	....	1128.17	28	1128.37	53	.....	....	1128.14	25

NOTE. Relation of gauge height to discharge affected by ice from Dec. 10th, 1914, to Feb. 24th, 1915, discharge for period computed from discharge measurements, observer's notes and climatologic records.

Monthly Discharge of Speed River near Guelph for 1914-5

Drainage Area, 77 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	191	8	59	2.48	.10	.77	.86
December "	110	8	37	1.43	.10	.48	.55
January (1915)	43	14	30	.56	.18	.39	.45
February	135	43	70	1.75	.56	.91	.95
March	307	82	137	3.98	1.07	1.78	2.05
April	427	37	132	5.55	.48	1.71	1.91
May	130	11	36	1.69	.14	.47	.54
June	110	8	27	1.43	.10	.35	.39
July	130	6	39	1.69	.08	.51	.59
August	627	13	138	8.14	.17	1.79	2.06
September	895	19	121	11.62	.25	1.57	1.75
October	311	25	67	4.04	.32	.87	1.00
The year	895	6	74	11.62	.08	.96	13.10

Speed River at Hespeler

Location—At a point 100 feet below the jail, which adjoins the power house, in the Town of Hespeler, Township of Waterloo, County of Waterloo.

Records Available—Discharge measurements from July 10, 1913. Daily gauge heights from October 23, 1913, to October 31, 1915.

Drainage Area—250 square miles.

Gauge—Vertical staff 0 to 12 feet on jail wall adjoining power house. The elevation of zero on the gauge is 935.00.

Channel and Control—Straight for about 300 feet above and below the gauging section. Loose gravel forms the bed of this stream, which is decidedly shifting. The banks are low, and overflow when the water raises 2 feet above normal. Weeds at the control and in channel have a decided effect at the gauging section.

Discharge Measurements—Made from a permanent wading section 100 feet below the gauge during the low stages, and the dam 400 feet above will be used as a weir during the flood season.

Winter Flow—The relation of gauge height to discharge is somewhat affected by the presence of ice for a short period during the winter season.

Regulation—A dam 400 ft. above this section causes serious fluctuations in the river stage during the low water period.

Accuracy—Owing to the shifting bed and the presence of weeds at and below section, greatly interfering with the metering of stream, these records can only be classed as fair.

Observer—W. D. Scott, Hespeler.

Discharge Measurements of Speed River at Hespeler in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 1....	Roberts, E....	92	90	.57	936.16	51 (a)	.....
Feb. 8....	"	95	105	1.27	936.64	135 (b)	.....
" 18....	"	95	121	1.46	936.58	176 (c)	.....
" 18....	"	95	121	1.43	936.58	174 (c)	.....
Mar. 4....	"	92	117	1.62	936.62	189	.....
Apr. 15....	"	103	163	2.28	937.12	373	.....
" 15....	"	103	163	2.27	937.12	371	.....
May 21....	"	93	89	1.32	936.29	118	.....
June 7....	"	93	87	1.23	936.27	107	.....
July 8....	"	92	108	1.45	936.62	157	.....
" 8....	"	92	110	1.34	936.62	150	.....
Aug. 26....	"	90	125	1.92	936.87	241 (d)	.....
" 26....	"	90	123	1.92	936.87	236 (d)	.....
Sept. 8....	"	99	164	2.20	937.21	363 (d)	.....
" 8....	"	98	159	2.10	937.17	335 (d)	.....
Oct. 14....	"	93	116	1.66	936.66	194 (d)	.....

(a) Broken ice jammed in channel below section.
(b) Ice at gauge, open water in centre.
(c) Ice 20 feet below section interfering somewhat.
(d) Weeds present in channel.

Daily Gauge Height and Discharge of Speed River at Hespeler for 1914-5

Drainage Area, 250 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*	*Feet*	*Sec-ft.*
1	935.84	37	936.48	141	936.20	55	936.37	80	936.37	117	936.83	232	936.70	195	936.25	94	935.85	38	936.46	136	936.87	244	936.89	250
2	936.06	63	936.46	136	936.10	43	936.44	92	936.44	132	936.88	247	936.55	157	936.12	72	936.04	61	936.42	127	936.92	259	937.39	430
3	436.09	68	936.60	169	936.14	48	936.44	92	936.44	132	936.87	244	936.46	136	936.08	66	936.08	67	936.58	164	936.54	154	937.56	506
4	936.07	65	936.62	174	936.12	45	936.42	89	936.42	127	936.85	238	936.55	157	936.12	72	936.12	72	937.96	716	936.48	141	937.37	422
5	936.08	66	936.56	159	936.08	41	936.44	92	936.44	132	937.12	326	936.37	117	936.10	69	936.21	87	938.50	1065	936.44	132	937.29	389
6	836.08	66	936.23	90	936.06	39	936.44	92	936.44	132	936.96	272	936.39	121	936.07	64	936.25	94	938.19	854	936.58	164	937.08	312
7	936.06	63	936.04	61	936.11	44	936.12	45	936.25	93	937.20	355	936.37	117	936.20	85	936.37	117	937.92	692	936.83	232	936.96	272
8	935.82	35	936.31	105	936.18	53	936.46	96	936.35	113	937.58	516	936.39	121	936.60	169	936.39	121	937.79	620	936.92	259	936.87	244
9	936.06	63	936.25	94	396.20	55	936.46	96	936.50	145	937.58	516	936.78	217	937.02	293	936.89	250	937.60	525	937.12	326	936.81	226
10	936.04	61	936.12	72	936.22	58	936.48	99	936.60	169	937.64	545	936.81	226	936.71	198	936.96	272	937.25	374	936.92	259	936.67	187
11	936.03	59	936.16	79	936.14	48	936.37	117	936.56	159	938.08	788	936.52	150	936.54	155	936.58	164	937.00	285	936.89	250	936.71	198
12	936.02	58	936.18	82	936.20	55	936.37	117	936.52	150	937.64	545	936.52	150	936.31	105	936.56	159	936.96	272	937.69	570	936.58	164
13	936.03	59	936.06	63	936.20	55	936.44	132	936.57	162	937.46	460	936.52	150	936.25	94	936.39	121	938.29	919	938.92	1375	936.50	145
14	986.01	56	936.16	79	936.29	68	936.37	117	936.79	220	937.27	382	936.48	141	936.46	136	936.35	113	938.12	812	939.50	1820	936.62	174
15	935.92	45	936.29	101	936.20	55	936.37	117	936.92	259	936.96	272	936.37	117	936.46	136	936.29	101	937.33	405	938.31	932	936.87	244
16	936.85	38	936.04	61	936.26	63	936.35	113	937.34	409	986.89	250	936.39	121	936.35	113	936.17	80	937.17	344	937.92	692	936.81	226
17	936.58	164	936.04	61	936.14	48	936.39	121	937.62	535	936.81	226	936.37	117	936.33	109	936.21	87	936.92	259	937.50	478	936.67	187
18	936.52	150	936.06	63	936.29	68	936.35	113	937.39	430	936.81	226	936.32	107	936.27	98	936.21	87	936.85	238	937.39	430	936.71	198
19	936.39	121	936.06	63	936.25	62	936.42	127	937.42	444	936.79	220	936.20	85	936.29	101	936.29	101	926.67	187	937.25	374	936.73	203
20	936.18	82	935.87	40	936.27	65	936.39	121	937.59	430	936.77	215	936.22	89	936.27	98	936.25	94	936.50	145	937.29	389	936.71	198
21	936.20	85	936.02	58	936.31	71	936.33	109	937.33	405	936.64	179	936.27	98	436.35	113	936.25	94	936.50	145	937.21	359	936.64	179
22	936.10	69	936.04	61	936.25	62	936.39	121	937.30	393	936.56	159	936.23	90	936·29	101	936.71	198	936.58	164	937.12	326	936.62	174
23	956.16	79	936.02	58	936.33	74	936.33	109	937.29	389	936.66	185	936.23	90	936.19	83	936.77	215	936.62	174	936.96	272	936.58	164
24	936.12	72	936.06	63	936.04	37	936.62	174	937.37	422	936.60	169	936.25	94	936.20	85	936.48	141	936.77	215	936.85	238	936.42	127
25	936.27	98	935.66	23	936.33	74	937.00	285	937.62	535	936.48	141	936.27	98	936.12	72	936.50	145	936.69	192	936.79	220	936.52	150
26	936.27	98	935.62	20	936.39	83	936.92	259	937.75	600	936.50	145	936.29	101	936.12	72	936.50	145	936.85	238	936.92	259	936.54	154
27	936.44	132	935.62	20	936.42	89	936.75	209	937.42	444	936.94	266	936.24	92	936.00	55	936.42	127	936.77	215	937.54	493	936.50	145
28	936.31	105	936.02	35	936.35	77	936.81	226	937.33	405	937.08	317	936.14	75	936.25	94	936.62	174	936.71	198	937.52	487	936.48	140
29	936.31	105	936.10	43	936.35	77	.....	.....	937.06	505	936.73	203	936.17	80	936.04	61	936.83	232	936.67	185	937.27	382	936.42	127
30	936.33	109	936.23	59	936.35	77	.....	.....	936.75	209	936.73	203	936.14	75	936.04	61	936.92	259	936.81	226	936.98	279	936.42	127
31	.....	.....	936.25	62	936.12	45	.....	.....	936.77	215	.....	.....	936.14	75	.....	.....	936.79	220	936.96	272	.....	.....	936.37	117

NOTE.—Relation of gauge height to discharge affected by ice from Dec. 28th, 1914, to Feb. 10th, 1915; discharges computed from discharge measurements, observer's notes and climatologic records.

Monthly Discharge of Speed River at Hespeler for 1914-5

Drainage Area, 250 Square Miles

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	164	35	79	.66	.14	.32	.36
December "	174	20	77	.70	.08	.31	.36
January (1915)	89	37	59	.36	.15	.24	.28
February	285	45	127	1.14	.18	.51	.53
March	600	93	284	2.40	.37	1.14	1.31
April	788	141	301	3.15	.56	1.20	1.34
May	226	75	121	.90	.30	.48	.55
June	293	55	104	1.17	.22	.42	.47
July	272	38	137	1.09	.15	.55	.63
August	1,065	127	367	4.26	.51	1.47	1.69
September	1,820	132	426	7.28	.53	1.70	1.90
October	506	117	219	2.02	.47	.88	1.01
The year	1,820	20	192	7.28	.08	.77	10.43

Whiteman's Creek near Burford

Location—At the first concrete bridge above the confluence of the creek with the Grand River, lot 14, concession 3, Township of Brantford, County of Brant.

Records Available—June 30, 1913, to October 31, 1915.

Drainage Area—154 square miles.

Gauge—Vertical staff 0 to 12 feet on the left abutment of bridge. Elevation of zero on the gauge 690.00, which has remained unchanged since established.

Channel and Control—All the water passes between the two abutments. The river bed directly under the bridge is solid concrete. During flood conditions on the Grand River this section may be affected by backwater.

Discharge Measurements—Made from the bridge at all stages.

Winter Flow—Seriously affected by ice.

Regulation—A mill located 2 miles upstream known as App's Mill causes serious daily fluctuations in the river stage at this section.

Accuracy—The fluctuations caused by chopping mill make it difficult to obtain the representative mean daily gauge height. The rating curve is fairly well defined up to 700 second feet.

Observer—J. R. Davis, Brantford.

Discharge Measurements of Whiteman's Creek near Burford in 1915

Date	Hydrographer	Width in Feet	Area of Section in Sq. Feet	Mean Velocity in Feet per Sec.	Gauge Height in Feet	Discharge in Sec-Feet	Discharge in Second-feet per Square Mile
Jan. 8....	Roberts, E....	64	44	1.86	691.83	80 (a)	.....
" 11....	"	64	60	2.05	692.10	123 (b)	.....
" 11....	"	64	60	2.10	692.12	124 (b)	.....
" 21....	"	64	72	2.11	691.44	151 (c)	.....
Feb. 12....	"	64	67	2.12	692.08	142 (c)	.....
" 20....	"	64	113	3.09	692.07	350 (c)	.....
" 20....	"	64	115	3.00	692.04	342 (c)	.....
" 25....	"	64	171	4.64	693.00	791	.....
" 25....	"	64	171	4.99	693.00	851	.....
" 25....	"	64	171	5.15	693.02	879	.....
Mar. 13....	"	64	97	3.04	691.83	294	.....
Apr. 9....	"	64	80	2.54	691.44	203	.....
May 3....	"	51	33	1.68	690.78	53	.....
June 1....	"	58	30	1.58	690.73	46	.....
July 5....	"	59	31	1.38	690.75	43	.....
" 5....	"	59	31	1.51	690.77	47	.....
" 17....	"	60	34	1.52	690.79	52	.....
" 17....	"	60	34	1.50	690.79	51	.....
" 18....	"	60	34	1.55	690.79	53	.....
Aug. 21....	"	64	55	1.95	691.10	107	.....
" 21....	"	64	53	2.05	691.10	109	.....
" 21....	"	64	52	1.96	691.08	102	.....
Sept. 25....	"	64	45	1.83	691.00	82	.....
" 25....	"	62	38	1.73	690.89	66	.....
" 25....	"	64	45	1.67	690.98	75	.....
" 25....	"	63	43	1.72	690.95	74	.....
Oct. 13....	"	63	45	1.77	690.96	80	.....
" 26....	"	63	44	1.75	690.98	77	.....

(a) Ice measurement.
(b) Ice measurement; water flowing over top of ice.
(c) Channel open in centre; ice at gauge.

Daily Gauge Height and Discharge of Whiteman's Creek near Burford for 1914-5

Drainage Area, 154 Square Miles

Day	November		December		January		February		March		April		May		June		July		August		September		October	
	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge	Gauge Ht.	Discharge
	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec ft.	Feet	Sec-ft.	Feet	Sec-ft.	Feet	Sec ft.	Feet	Sec-ft	Feet	Sec ft.
1	690.71	44	691.27	144	691.31	37	691.66	46	691.48	198	691.31	153	690.92	74	690.50	20	690.60	31	690.77	52	691.12	111	691.19	126
2	690.77	52	691.44	187	691.42	43	691.68	52	691.71	263	691.25	139	690.75	49	690.50	20	690.62	33	690.73	47	690.89	69	691.44	187
3	690.71	44	691.54	214	691.50	52	691.71	56	691.71	263	691.20	128	690.87	66	690.62	33	690.62	33	691.12	111	690.83	60	691.58	225
4	690.71	44	691.37	168	691.56	59	691.87	79	691.54	214	691.20	128	690.83	60	690.71	44	690.62	33	691.77	281	690.69	42	691.44	187
5	630.73	47	691.27	144	691.43	47	691.94	88	691.37	168	691.23	135	690.89	69	690.69	42	690.71	44	692.02	360	690.81	57	691.56	218
6	690.68	41	691.14	115	691.51	56	691.92	88	691.25	139	691.33	158	690.87	66	690.69	42	690.67	39	692.10	386	690.87	66	691.62	237
7	690.73	47	691.10	107	691.87	88	691.94	96	691.20	128	691.27	144	690.94	78	690.73	47	690.64	36	691.89	318	690.89	69	191.37	168
8	690.71	44	691.06	99	691.83	79	691.96	99	691.20	128	691.46	192	691.04	96	690.85	63	690.87	66	691.64	242	691.04	96	691.23	137
9	690.75	49	690.98	86	691.87	88	691.98	107	691.25	139	691.52	209	691.12	111	691.00	88	690.98	85	691.62	237	691.04	96	691.14	115
10	690.75	49	691.00	88	691.92	92	692.00	113	691.20	128	691.56	220	691.14	115	690.90	71	690.79	45	691.58	225	691.00	88	691.10	107
11	690.68	41	690.89	69	691.98	101	692.04	124	691.29	149	691.60	231	691.06	99	690.81	57	690.71	44	691.54	214	690.85	63	191.02	92
12	690.58	29	690.92	74	691.96	107	692.12	144	691.50	203	691.71	263	690.92	74	690.79	55	690.73	47	691.54	214	690.87	66	691.02	92
13	690.68	41	690.87	66	691.87	107	692.14	151	691.71	263	691.62	237	690.89	69	690.75	49	690.67	39	691.75	275	691.08	103	390.81	57
14	690.66	38	690.92	74	691.96	117	692.23	217	691.92	327	691.44	187	690.83	60	690.79	55	690.64	36	691.92	327	691.19	126	690.96	81
15	690.81	57	691.35	88	691.83	122	692.53	275	692.16	407	691.35	163	690.83	60	690.71	44	690.67	39	691.96	340	691.17	121	691.29	149
16	691.14	115	691.35	88	691.56	128	692.50	421	692.31	462	691.33	158	690.85	63	690.62	33	690.64	36	691.69	257	691.12	111	691.31	153
17	691.20	128	691.04	43	691.20	128	692.50	538	692.29	454	691.20	128	690.79	55	690.62	33	690.64	36	691.44	187	691.04	96	691.27	144
18	691.23	135	691.06	49	691.98	347	692.50	538	692.14	400	691.18	124	690.81	57	690.62	33	690.64	36	691.37	168	691.00	88	691.19	126
19	690.96	81	691.16	56	691.23	133	692.14	400	691.89	318	691.04	96	690.73	47	690.69	42	690.62	33	691.33	158	691.08	103	690.98	85
20	691.16	120	691.00	37	691.23	117	691.92	327	691.79	287	691.04	96	690.75	49	690.67	39	690.62	33	691.21	130	691.04	96	690.87	66
21	691.33	158	691.00	39	691.29	107	691.87	312	691.77	281	691.02	92	690.73	47	690.58	29	690.62	33	691.14	115	691.08	103	691.02	92
22	690.92	74	691.31	79	691.48	128	691.75	275	691.62	237	691.02	92	690.77	52	690.58	29	690.62	33	691.17	121	691.06	99	691.00	88
23	691.06	99	691.20	56	691.46	107	691.94	334	691.56	220	691.04	96	690.71	44	690.58	29	690.62	33	691.19	126	690.96	81	690.94	78
24	690.96	81	691.39	83	691.50	113	692.46	522	691.71	263	690.89	69	690.67	39	680.60	31	690.62	33	691.25	139	691.08	103	690.96	81
25	690.89	69	691.37	79	691.23	56	693.00	765	691.73	269	691.02	92	690.69	42	690.67	39	690.62	22	691.29	149	691.04	96	690.79	55
26	690.89	69	691.42	71	691.66	107	692.64	599	691.85	305	690.87	66	690.75	49	690.62	33	690.64	36	691.12	111	691.04	96	690.83	60
27	691.08	103	691.46	79	691.60	88	692.46	522	691.66	248	690.83	60	690.69	42	690.58	29	690.62	33	691.08	103	691.46	192	690.83	60
28	691.18	124	691.39	79	691.52	63	692.23	432	691.62	237	690.83	60	690.73	47	690.60	31	690.67	39	690.96	81	691.64	243	690.81	57
29	691.18	124	691 62	107	691.54	49	.....	.....	691.37	168	690.87	66	690.69	42	690.60	31	690.67	39	691.08	103	691.46	192	690.83	60
30	691.18	124	691.68	122	691.35	26	.....	.....	691.33	158	690.85	63	690.64	36	690.58	29	690.69	42	691.17	121	691.28	146	690.81	57
31	.....	.....	691.56	97	691.60	37	.....	.....	691.31	153	.....	....	690.62	33	.....	.....	690.73	47	691.14	115	.....	.....	690.75	49

NOTE.—Relation of gauge height to discharge affected by ice from Dec. 15th, 1914, to Feb. 15th, 1915; discharges computed from climatologic records, discharge measurements and observer's notes.

Monthly Discharge of Whiteman's Creek near Burford for 1914-5

Drainage Area 154 Square Feet

Month	Discharge in Second-feet			Discharge in Second-feet per Square Mile			Run-off
	Maximum	Minimum	Mean	Maximum	Minimum	Mean	Depth in Inches on Drainage Area
November (1914)	158	38	76	1.03	.25	.49	.55
December "	214	37	93	1.39	.24	.60	.69
January (1915)	347	26	94	2.25	.17	.61	.70
February	765	46	276	4.97	.30	1.79	1.86
March	462	128	244	3.00	.83	1.58	1.82
April	263	60	135	1.71	.39	.88	.98
May	115	33	61	.75	.21	.40	.46
June	88	20	41	.57	.13	.27	.30
July	85	22	39	.55	.14	.25	.29
August	386	47	188	2.51	.31	1.22	1.41
September	243	42	103	1.58	.27	.67	.75
October	237	49	113	1.54	.32	.73	.84
The year	765	20	121	4.97	.13	.79	10.65

Miscellaneous Measurements

River	Location	Date	Discharge in Sec-ft.
Ausable	Arkona	May 14, 1915	75
"	"	June 24, 1915	19
"	"	July 28, 1915	41
"	"	Aug. 18, 1915	599
"	"	Oct. 6, 1915	412
Cedar	Near Manitou Falls	July 15, 1915	505
Madawaska	Claybank	Sept. 22, 1915	1,736
"	"	Oct. 23, 1915	1,895
Severn	Severn Bridge	Feb. 9, 1915	656
"	"	Mar. 9, 1915	959
"	"	May 6, 1915	1,526
Snake Creek	Port Elgin	Aug. 26, 1915	17
" "	"	Oct. 19, 1915	20
Sydenham	Florence	Aug. 17, 1915	478
"	"	Oct. 7, 1915	173
Turtle	Otter Falls	Jan. 22, 1915	221
"	"	Mar. 1, 1915	216
Wabigoon	Wainwright Falls	Apr. 21, 1915	292
"	Sawmill Intake	Apr. 22, 1915	30
Winnipeg	Whitedog Falls, S. Channel	Mar. 9, 1915	9,569
"	" " "	May 14, 1915	16,239
"	Whitedog Falls, N. Channel	Mar. 8, 1915	405
"	" " "	May 14, 1915	731
"	" " "	July 10, 1915	1,389
"	" " "	Aug. 11, 1915	1,377

EASTERN ONTARIO DISTRICT

Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in Eastern Ontario District for which such data are available in this report

Station	Drainage Area	1914	1915										
		Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Year.
Bonnechere River near Eganville	670	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.36	.....
Bonnechere River near Golden Lake	575	.....	.....	.....	.....	.....	.....	.....	.....	.43	.44	.64	.33	.....
Mississippi River at Ferguson's Falls	1,042	.....	.....	.....	.....	.....	.....	.....	.....	.....	.51	.50	.45	.....
Mississippi River at Galetta	1,456	.....	.....	.....	.....	.....	.....	.....	.....	.34	.43	.38	.30	.....
Mississippi River near Snow Road	446	.....	.....	.....	.....	.....	.....	.....	.....	.....	.70	.74	.67	.....
Tay River near Glen Tay	204	.....	.....	.....	.....	.....	.....	.....	.....	.....	.34	.35	.27	.....
York River near Bancroft	374	.....	.....	.....	.....	.....	.....	.....	.....	.....	.78	.72	.69	.....

NORTHERN ONTARIO DISTRICT

Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in the Northern Ontario District for which such data are available in this report.

Station	Drainage Area	1914		1915										
		Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Year.
Aux Sables River at Massey	524	.....	.....	.....	.....	.....	.....	.....	.....	1.03	.42	.55	1.09	.....
Blanche River near Englehart	430	.50	.31	.33	.32	.60	1.53	2.27	1.27	1.54	.80	.88	1.01	.95
Frederickhouse River at Frederickhouse	1,260	.....	.....	.....	.....	.....	.....	.....	.....	.....	.52	.62	2.07	.....
Kabuskong River at Bonfield	67	.....	.....	.....	.....	.....	.....	.....	.....	.....	.52	.51	.51	.....
Kagawong River at Kagawong	94	.....	.....	.....	.....	.....	.....	.....	.....	.....	.60	.36	.40	.....
Maganetawan River (No. Branch) near Burk's Falls	107	.....	.....	.....	.....	.....	.....	.....	.....	.....	.79	.30	1.49	.....
Maganetawan River (So. Branch) near Burk's Falls	257	.....	.....	.....	.....	.....	.....	.....	.....	.....	.80	.72	1.21	.....
Muskoka River (North Branch) near Port Sydney	560	.....	.....	.....	.....	.....	.....	.....	.....	.66	.52	.45	1.47	.....
Muskoka River (So. Branch) at Tretheway's Falls	668	.65	.93	1.02	.91	.89	2.63	1.89	1.84	1.00	.88	.77	.93	1.19
Seguin River near Parry Sound	380	.....	.....	.....	.....	.....	.....	.....	.....	.....	.53	.48	1.09	.....
South River near Powassan	305	.90	.68	.43	.47	.56	3.35	1.28	.89	.56	.84	.52	1.12	.97
Spanish River at Espanola	4,490	.....	.....	.....	.....	.....	.....	.....	1.41	.70	.48	.54	1.47	.....
Sturgeon River at Smoky Falls	2,250	1.24	.72	.31	.29	.28	1.48	2.27	1.66	1.04	.80	.95	1.23	1.05
Vermilion River near Whitefish	1,580	.....	.....	.....	.....	.....	.....	.....	.....	.94	.21	.49	1.38	.....
Wanapitei River near Wanapitei	940	.....	.....	.....	.....	.....	.....	.....	.....	.....	.66	.80	.78	.....

NORTH-WESTERN ONTARIO DISTRICT

Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in the North-Western Ontario District for which such data are available in this report

Station	Drainage Area	1914		1915										
		Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Year.
Eagle River at Eagle River	970	.37	.33	.31	.36	.27	.29	.59	.68	.73	.49	.34	.31	.42
English River at Ear Falls	11,700	.....	.....	.....	.39	.36	.36	.48	.66	.72	.64	.53	.57	.....
English River at Manitou Falls	14,600	.....	.....	.....	.35	.31	.29	.46	.63	.67	.61	.50	.54	.....
English River near Oak Falls	15,570	.....	.....	.....	.37	.32	.32	.46	.63	.68	.61	.51	.57	.....
Footprint River at Rainy Lake Falls	425	.22	.24	.27	.27	.24	.20	1.03	1.61	1.23	.76	.32	.18	.55
Manitou River at Devil's Cascades	435	.49	.45	.43	.43	.42	.44	.58	.64	.75	.61	.49	.47	.51
Seine River at Skunk Rapids	2,300	.52	.42	.30	.25	.22	.27	.....	.....	.....	.....	.....	.....	.....
Turtle River at Mountain Rapids	1,760	.59	.23	.10	.11	.12	.29	.75	1.16	1.34	.79	.37	.40	.52
Wabigoon River near Quibell	2,400	.36	.28	.29	.29	.27	.54	.91	.81	.66	.36	.34	.42	.46
Wabigoon River at Wabigoon Falls	3,120	.36	.28	.28	.26	.23	.55	.82	.78	.67	.36	.33	.45	.45

SOUTH-WESTERN ONTARIO DISTRICT

Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations in South-Western Ontario District for which such data are available in this report.

Station	Drainage Area	1914		1915										
		Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Year.
Beaver River near Feversham	37	.43	.59	.46	.54	.62	1.54	.81	.65	.43	.38			
Beaver River near Kimberley	100	.....	.....	.....	.....	.....	1.20	1.76	.29	.60	.44	.52	.58	.....
Bighead River at Meaford	132	.....	.....	.....	.....	.....	.....	.....	.....	.33	.39	.43	.57	.....
Black River near Washago	585	.....	.....	.....	.....	.....	.....	.....	.92	.31	.25	.27	.81	.....
Credit River at Cataract Junction	85	.....	.....	.....	.....	.....	.....	.....	.33	.35	.62	.71	.55	.....
Maitland River at Ben Miller	950	.59	.89	1.29	3.40	1.79	1.46	.31	.16	.14	.87	1.41	1.04	1.10
Mill Creek near Redwing	49	.....	.....	.....	.....	.....	.....	.....	.....	.....	.22	.51	.69	.....
Nottawasaga River near Nicolston	416	.61	.49	.47	.72	1.91	1.55	.53	.26	.37	.64	.56	.58	.72
Rocky Saugeen River near Markdale	96	.....	.....	.....	.....	.....	.....	.....	.....	.64	.60	.72	.76	.....
Saugeen River near Port Elgin	1,565	.74	.63	.76	1.85	1.71	1.66	.52	.39	.33	.47	.73	.83	.88
Saugeen River near Walkerton	895	.66	.73	.63	1.19	1.39	1.65	.58	.36	.31	.49	.73	.86	.80
Sydenham River near Owen Sound	71	.....	.....	.....	.....	.....	.....	.....	.....	.32	.39	.42	.58	.....
Thames River (Main Stream) near Byron	1,270	.46	.59	1.18	2.63	1.33	1.09	.38	.29	.46	1.17	.69	.76	.91
Thames River (South Branch) near Ealing	515	.....	.....	.....	.....	.....	.....	.....	.24	.39	1.12	.84	.80	.....
Thames River (North Branch) near Fanshaw	650	.....	.....	.....	.....	.....	.....	.....	.12	.20	.94	.37	.48	.....

SOUTH-WESTERN ONTARIO DISTRICT

GRAND RIVER BASIN

Summary of Discharge

Summary of discharge in second-feet per square mile for regular river stations on Grand River and tributaries for which such data are available in this report

Station	Drainage Area	1914	1915										
		Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Year
Grand River at Belwood	280	.27	.46	.28	.64	3.35	2.32	.27	.08	.13	1.00	1.40	.80	.92
Grand River near Conestogo	550	.28	.39	.18	.77	2.62	2.11	.30	.19	.18	1.39	1.53	.90	.91
Grand River at Galt	1,360	.30	.34	.25	.57	1.60	1.63	.32	.20	.26	1.00	1.28	.72	.70
Grand River at Glen Morris	1,390	.40	.35	.30	.60	.....	1.66	.38	.27	.30	1.39	1.42	.73	.....
Grand River at Brantford	2,000	.31	.42	.33	.84	1.95	1.71	.44	.36	.34	1.18	1.10	.75	.81
Grand River at York	2,280	.34	.43	.35	.85	1.67	1.78	.37	.24	.24	1.18	1.03	.73	.76
Irvine River near Salem	67	.27	.26	.45	1.34	2.82	2.63	.34	.13	.40	3.57	2.88	1.28	1.36
Conestogo River at St. Jacob's	305	.29	.31	.18	1.90	4.71	2.32	.21	.06	.18	1.16	1.80	.75	1.14
Speed River at Caraher's Bridge, near Guelph	77	.77	.48	.39	.91	1.78	1.71	.47	.35	.51	1.79	1.57	.87	.96
Speed River at Hespeler	250	.32	.31	.24	.51	1.14	1.20	.48	.42	.55	1.47	1.70	.88	.77
Galt Creek at Galt	45	.64	.84	.64	.98	1.56	.84	.44	.30	.53	1.29	.71	.67	.80
Nith River near Canning	365	.67	.75	.50	1.66	3.18	1.66	.41	.30	.33	1.54	.79	.74	1·04
Whiteman's Creek near Burford	154	.49	.60	.61	1.79	1.58	.88	.40	.27	.25	1.22	.67	.73	.79
Fairchild's Creek near Onondaga	115	.23	.27	.18	2.08	1.97	.50	.19	.09	.10	.70	.45	.62	.61
Boston Creek near York	125	.21	.36	.51	2.05	1.72	1.64	.32	.12	.18	.62	.18	.21	.66

INDEX

Page

Accounts—Municipal 137
Acts 1
Administration Building 63
Agreements 58
Ailsa Craig—Municipal Work 119
Alexandria—Municipal Work 118
Almonte—Municipal Work 118
Arthur—Municipal Work 118
Artemesia Tp.—Municipal Work..... 118
Arva—Municipal Work 118
Athens—Municipal Work 118
Atwood—Municipal Work 119
Aux Sables River—Stream Flow Data 283-84-85
Ayr—Distributing Station 75
Aylmer—Municipal Work 119

B

Barrie—Municipal Work 118
Barrie—Distributing Station 80
Beaverton—Municipal Work 118
Beaverton—Distributing Station 79
Beaver River—Stream Flow Data.. 364-65-66-67-68-69
Berlin—Municipal Work 120
Berlin—Transformer Station 71
Berlin—Underground Construction . 235
Blenheim—Municipal Work 120
Blenheim—Distributing Station 78
Black River—Stream Flow Data.373-74-75
Blanche River—Stream Flow Data... 286-87-88
Bighead River—Stream Flow Data.. 370-71-72
Bolton—Municipal Work 120
Bonnechere River—Stream Flow Data 258-59-60-61-62-63
Boston Creek—Stream Flow Data.. 430-31-32
Bothwell—Distributing Station 77
Bracebridge—Municipal Work 118
Brant—Transformer Station 75
Brantford—Municipal Work 120
Brantford Tp.—Municipal Work 121
Brechin—Municipal Work 121
Brigden—Municipal Work 118
Brockville—Municipal Work 121
Brockville—Distributing Station 83
Burk's Falls—Municipal Work 118
Burford—Municipal Work 121
Burford—Distributing Station 76
Burgessville—Municipal Work 121

C

Campbellford—Municipal Work 118
Cannington—Municipal Work 118
Cannington—Distributing Station ... 79

Page

Capital Cost—Total 115
Carleton Place—Municipal Work 118
Chatham—Municipal Work 122
Chatham—Ornamental Street Lighting 233
Chatham—Office Building 76
Chatsworth—Municipal Work 118
Chatsworth—Distributing Station .. 82
Chapleau—Municipal Work 118
Chesterville—Municipal Work 118
Chesley—Municipal Work 118
Clifford—Municipal Work 118
Cobden—Municipal Work 118
Cobden—Development of Power 250
Cochrane—Municipal Work 118
Cobalt—Municipal Work 118
Collingwood—Municipal Work 118
Collingwood—Distributing Station... 80
Coldwater—Municipal Work 118
Conestogo River—Stream Flow Data 433-34-35
Contracts for Material 60
Cooksville—Transformer Station .. 74
Credit River—Stream Flow Data ... 376-77-78
Crediton—Municipal Work 118
Crossings 58

D

Dashwood—Municipal Work 118
Delaware—Municipal Work 112
Delaware—Distributing Station 69
Description of Lines 92
Dorchester—Municipal Work 122
Dorchester—Distributing Station .. 69
Dresden—Municipal Work 123
Dresden—Distributing Station 78
Drumbo—Distributing Station 75
Dundas-Hamilton—Survey 60
Contracts for Material 60
Organization 61
Progress of Construction 61
Dundas—Municipal Work 123
Dundas County—Municipal Work . 118
Dundas—Transformer Station 67
Dundas—Distributing Station 67
Dundalk—Municipal Work 118
Durham—Municipal Work 118
Dutton—Municipal Work 123
Dutton—Distributing Station 74

E

Eagle River—Stream Flow Data .. 331-32-33
Electric Railway Projects 236
Electric Railway Systems—Station Construction 70
Eastwood—Municipal Work 118

Page

East Zorra Township Municipal Work 118
Elmvale—Municipal Work 118
Elk Lake—Municipal Work 118
Electric Steel & Metals Company—Sub-Station 66
Elora—Distributing Station 71
Embro Distributing Station 72
English River—Stream Flow Data.. 334-35-36-37-38-39-40-41-42-43-44
Etobicoke—Distributing Station ... 75
Eugenia Falls—Power Construction. 253
Eugenia Falls System—Generating Station 80
Exeter—Municipal Work 123
Exeter—Distributing Station 70
Expenditures—Capital Account 115
Expenditures—Provincial Account .. 117

F

Fairchild's Creek—Stream Flow Data 436-37-38
Fergus—Distributing Station 71
Flesherton—Municipal Work 118
Footprint River—Stream Flow Data 345-46-47
Ford City—Municipal Work 124
Forest—Municipal Work 123
Fort Frances—Municipal Work 118
Frederickhouse River—Stream Flow Data 289-90-91

G

Galt Creek—Stream Flow Data 439-40-41
Georgetown—Distributing Station .. 71
Grantham Tp.—Municipal Work 124
Grand River—Stream Flow Data .. 410-11-12-13-14-15-16-17-18-19-20 21-22-23-24-25-26-27-28-29
Grand Valley—Municipal Work 118
Granton—Municipal Work 118
Gravenhurst—Municipal Work 124
Grenville—Municipal Work 118
Grimsby—Municipal Work 125
Guelph—Municipal Work 125
Guelph—Transformer Station 70

H

Haileybury—Municipal Work 118
Hamilton—Municipal Work 125
Hamilton—Underground Construction 235
Hanover—Municipal Work 118
Harriston—Distributing Station 72
Harriston—Municipal Work 125
Harwich—Municipal Work 126
Hastings—Municipal Work 118
Havelock—Municipal Work 118
Hensall—Municipal Work 118
Hespeler—Municipal Work 126
Hepworth—Municipal Work 118
Highgate—Municipal Work 118
Holstein—Municipal Work 118
Huntsville—Municipal Work 118
Huntsville—Distributing Station ... 84

Page

I

Illuminating Laboratory 244
Ilderton—Municipal Work 118
Inspection—Electrical 58, 217
Iroquois—Municipal Work 126
Irvine River—Stream Flow Data .. 442-43-44

K

Kabuskong River—Stream Flow Data 292-93-94
Kagawong River—Stream Flow Data 295-96-97
Kemptville—Municipal Work 118
Kent—Transformer Station 76
Kingston—Municipal Work 126
Kintore—Municipal Work 118
Kirkton—Municipal Work 118
Kamoka—Municipal Work 118

L

Lakefield—Municipal Work 118
Lambeth—Municipal Work 126
Lanark—Municipal Work 118
Listowel—Municipal Work 127
Longford—Municipal Work 118
London—Station Construction 70
London—Transformer Station 68
Low Tension Transmission Lines... 91
Lucan—Distributing Station 69
Lynden—Municipal Work 127
Lynden—Distributing Station 67

M

Madawaska River—Stream Flow Data 264
Magnetawan River—Stream Flow Data 298-99-300-01-02-03
Manitou River—Stream Flow Data.. 348-49-50
Maitland River—Stream Flow Data. 379-80-81
Maidstone Tp.—Municipal Work ... 119
Markdale—Municipal Work 119
Markdale—Distributing Station 81
Markham—Municipal Work 127
Maxville—Municipal Work 119
Meaford—Municipal Work 119
Merrickville—Municipal Work 119
Mill Creek—Stream Flow Data 382-83-84
Milverton—Municipal Work 127
Milverton—Distributing Station 72
Mimico—Distributing Station 74
Midland—Distributing Station 80
Mississagi River—Stream Flow Data 304
Mississippi River—Stream Flow Data 265-66-67-68-69-70-71-72-73
Montreal River—Stream Flow Data. 305
Moira River—Stream Flow Data .. 274
Morrisburg—Municipal Work 127
Mount Forest—Municipal Work 119
Mount Brydges—Municipal Work .. 128

Page

Muskoka River—Stream Flow Data. 306-07-08-09-10-11
Municipal Purchases and Sales 228
Municipal Rates 220

N

Napanee River—Stream Flow Data. 275
New Dundee—Municipal Work 119
New Liskeard—Municipal Work 119
Newbury—Municipal Work 119
Niagara Falls—Municipal Work 128
Niagara Development 58, 248
Niagara—Transformer Station 65
Niagara System—Operation 106
Nith River—Stream Flow Data 445-46-47
North Bay—Municipal Work 119
North Bay District—Municipal Work 119
North Norwich Township—Municipal Work 128
Norwood—Municipal Work 119
Nottawasaga River—Stream Flow Data 385-86-87

O

Oil Springs—Municipal Work 119
Office Building 63
Operation of Systems 106
Organization—Niagara Duplication . 61
Organization—Dundas-Hamilton 61
Ornamental Street Lighting 233
Orangeville—Municipal Work 119
Ottawa—Municipal Work 119
Otterville—Municipal Work 128
Owen Sound—Municipal Work 129
Underground Construction 235
Distributing Station .. 82

P

Paipoonge Tp.—Municipal Work 119
Palmerston—Municipal Work 129
Palmerston—Distributing Station ... 72
Parkhill—Municipal Work 129
Penetang—Municipal Work 119
Perth—Municipal Work 119
Peterborough—Municipal Work 119
Petrolia—Municipal Work 129
Petrolia—Distributing Station 78
Port Arthur—System Operation 112
Port Arthur—Municipal Work 119
Port Colborne—Municipal Work 130
Port Dalhousie—Municipal Work 130
Port McNichol—Municipal Work 119
Port McNichol—Distributing Station. 80
Port Robinson—Municipal Work 130
Power and Storage Surveys 248
Power Commission Act 12
Power for Eastern District 58
Prescott—Municipal Work 119
Preston—Transformer Station 71
Princeton—Municipal Work 130
Priceville—Municipal Work 119

Page

Progress of Construction Niagara Duplication 61
Dundas-Hamilton 61
Provincial Expenditures 117
Purchases and Sales—Municipal 228

R

Radial Railways 58
Radial Railways Act—Hydro-Electric 1
Radial Railways—Electric 236
Radial Railways—Radial 58
Rainy River—Municipal Work 119
Rates—Municipal 220
Regular Station—Stream Flow Data 257, 282, 330, 363, 409
Renfrew—Ornamental Street Lighting 233
Right-of-Way—High Tension Lines. 57
Right-of-Way—Low Tension Lines . 57
Ridgetown—Municipal Work 130
Ridgetown—Distributing Station .. 77
Rochester Tp.—Municipal Work ... 119
Rodney—Municipal Work 119
Rocky Saugeen River—Stream Flow Data 388-89-90

S

Sarnia—Municipal Work 131
Sandwich—Municipal Work 131
Sandwich East Township—Municipal Work 131
Sault Ste. Marie—Municipal Work.. 119
Saugeen River—Stream Flow Data 391-93-93-94-95-96
Scarboro Township—Municipal Work 119
Seguin River—Stream Flow Data .. 312-13-14
Severn System—Operation of 112
Seine River—Stream Flow Data... 351-52-53
Shallow Lake—Municipal Work 119
Shelburne—Municipal Work 119
Shedden—Municipal Work 119
Simcoe—Municipal Work 131
Simcoe—Ornamental Street Lighting 234
Simcoe—Municipal Station 76
Smith's Falls—Municipal Work 119
South Norwich Township—Municipal Work 119
South River—Stream Flow Data .. 315-16-17
South Falls System—Station Construction 84
Spencerville—Municipal Work 119
Spanish River—Stream Flow Data . 318-19-20
Speed River—Stream Flow Data .. 448-49-50-51-52-53
Stayner—Municipal Work 119
Stamford Tp.—Municipal Work 132
Steel Tower Lines 62
Strathroy—Municipal Station 69
Stratford—Municipal Work 132
Stratford—Transformer Station 71

Page

Stream Flow Data—Hydraulic Investigations ..
St. Catharines—Municipal Work 132
St. George—Municipal Work 133
St. George—Distributing Station 75
St. Jacobs—Municipal Work 133
St. Lawrence System—Operation of . 111
St. Mary's—Transformer Station ... 72
St. Mary's—Municipal Work 133
St. Thomas—Municipal Work 133
St. Thomas—Ornamental Street Lighting 234
St. Thomas—Transformer Station .. 73
St. Thomas—Hydro-Electric Commission Station 74
Sturgeon River—Stream Flow Data. 321-22-23
Sunderland—Municipal Work 119
Surveys—Steel Tower Lines 60
Sydenham River—Stream Flow Data 397-98-99

T

Tara—Municipal Work 119
Tay Township—Municipal Work .. 119
Tay River—Stream Flow Data 276-77-78
Thamesville—Distributing Station .. 77
Thames River—Stream Flow Data.. 400-01-02-03-04-05-06-07-08
Tilbury—Distributing Station 78
Tilbury—Municipal Work 134
Toronto—Municipal Work 134
Toronto—Transformer Station 67
Transformer and Distributing Station Capacities—Table of 85
Transformers Purchased—Construction 88
Trenton—Municipal Work 119
Trent Valley District—Municipal Work 119
Turtle River—Stream Flow Data 354-55-56

U

Underground Construction—Municipal 235

V

Valuations—Municipal 119
Vaughan Tp.—Municipal Work 119

Page

Vermillion River—Stream Flow Data 324-25-26
Victoria Harbor—Municipal Work . 119

W

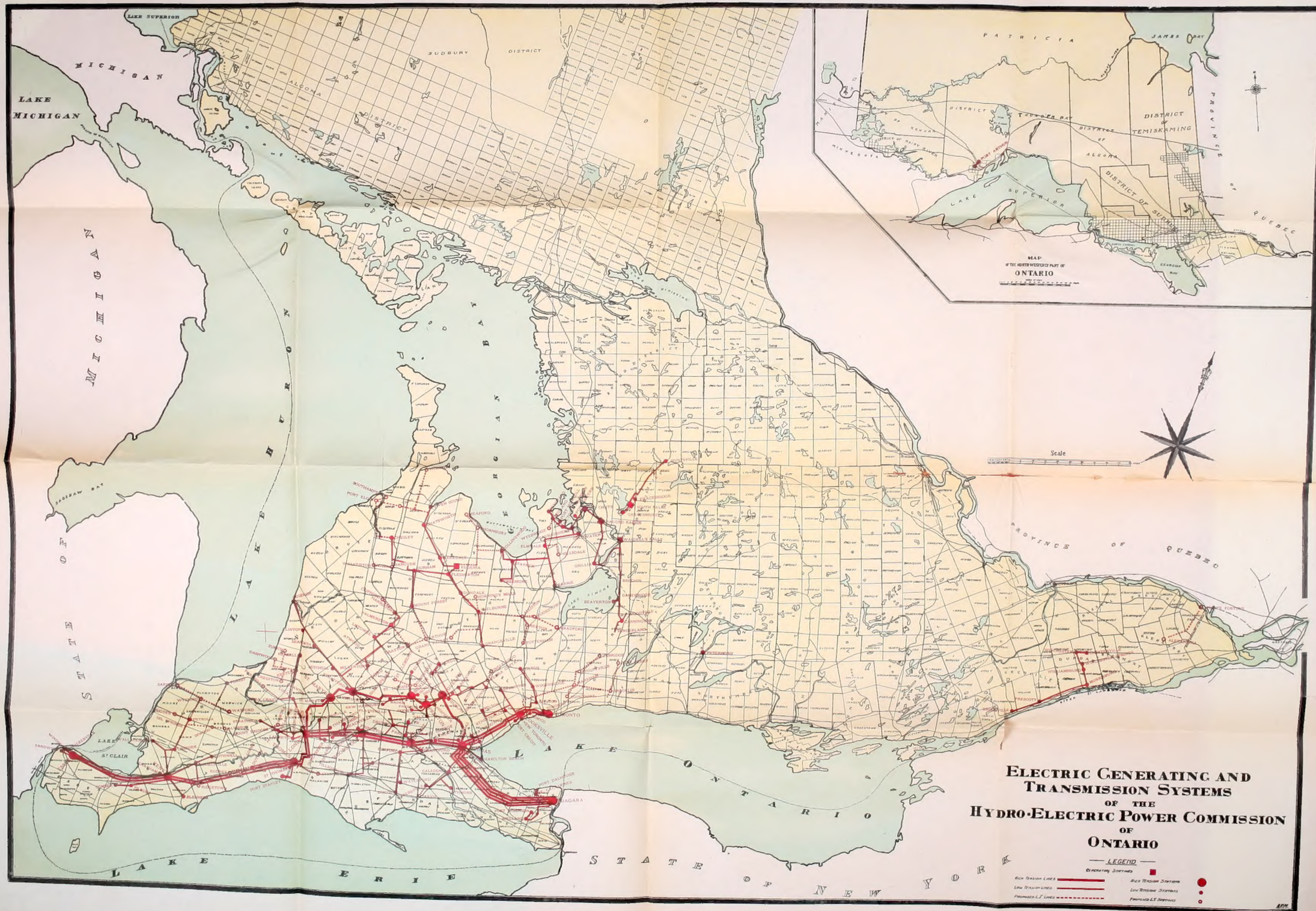
Waubigoon River—Stream Flow Data 357-58-59-60-61-62
Walkerville—Municipal Work 135
Wallaceburg—Municipal Work 134
Wallaceburg—Distributing Station . 77
Wanapitei River—Stream Flow Data 327-28-29
Wasdell's Falls System—Operation of 114
Station Construction 79
Waterdown—Distributing Station ... 67
Waterford—Distributing Station 75
Waubaushene—Municipal Work 119
Welland—Municipal Work 134
Welland—Distributing Station 66
Wellesley—Municipal Work 135
Westport—Municipal Work 119
West Lorne—Municipal Work 119
Whiteman's Creek—Stream Flow Data 454-55-56
Williamsburg—Distributing Station. 84
Williamsburg—Municipal Work 135
Wilmot Township—Municipal Work 119
Winchester—Municipal Work 119
Windsor—Municipal Work 135
Windsor—Ornamental Street Lighting 234
Windsor—Hydro-Electric System .. 79
Woodville—Municipal Work 119
Woodbridge—Distributing Station .. 75
Woodstock—Transformer Station .. 72
Woodstock—Thames Valley & Ingersoll Railway—Station Construction 73
Woodham—Municipal Work 119
Work Completed—Niagara Duplication 61
Work Completed—Dundas-Hamilton 61

Y

York River—Stream Flow Data 279-80-81

Z

Zurich—Municipal Work 119


LAKE SUPERIOR
MICHIGAN
LAKE MICHIGAN
SUDBURY DISTRICT
ALGOMA DISTRICT
PATRICIA
JAMES BAY
DISTRICT OF TEMISKAMING
DISTRICT OF ALGOMA
DISTRICT OF SUDBURY
PROVINCE OF QUEBEC
LAKE SUPERIOR
MAP OF THE NORTH WESTERN PART OF ONTARIO
GEORGIAN BAY
LAKE HURON
STATE OF MICHIGAN
PROVINCE OF QUEBEC
Scale
LAKE ST CLAIR
LAKE ONTARIO
LAKE ERIE
STATE OF NEW YORK
ELECTRIC GENERATING AND TRANSMISSION SYSTEMS OF THE HYDRO-ELECTRIC POWER COMMISSION OF ONTARIO
LEGEND
GENERATING STATIONS
HIGH TENSION LINES
LOW TENSION LINES
PROPOSED L.T. LINES
HIGH TENSION STATIONS
LOW TENSION STATIONS
PROPOSED L.T. STATIONS

146003
Gov.Doc. Ontario. Legislative Assembly
Ont Sessional papers.
L Vol.48, pt.11 (1916)

University of Toronto
Library

DO NOT
REMOVE
THE
CARD
FROM
THIS
POCKET

Acme Library Card Pocket
LOWE-MARTIN CO. LIMITED